

Ground Investigation Factual Report

Project Mensa Additional Site Investigation of Land Surrounding Buildings 8S2, 8F2 and 8F3B

AWE plc

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1 Introduction

1.1 Background

RPS Planning and Development (RPS) have been requested by AWE plc (Order ref. 30068054/0 dated 5th August 2008) to undertake a ground investigation to support the AWE Project Mensa development. Data on the ground conditions in the vicinity of Buildings 8F2 and 8F3B, and where Building 8S2 stood prior to demolition, is required to enable AWE to facilitate the design of a proposed new industrial facility at AWE Burghfield.

This factual report provides a detailed account of the intrusive ground investigation and associated groundwater and soil gas monitoring undertaken, as outlined within the Ground Investigation Proposal (*Ref. 1*). The data gathered from this investigation will be used by AWE plc to assess any risks associated with future developments at the site.

1.2 Report Structure

The remainder of the report is structured as follows:

Section 2; Site Location and Description;

Section 3; Site Investigation Methodology, and

Section 4; References.

2 Site Location and Description

2.1 General Description of AWE Burghfield

The AWE Burghfield site is located approximately 0.5 km east of Burghfield village and 6km to the south-west of Reading. The National Grid Reference for the site centre is approximately SU 680 680. AWE Burghfield is around 264 acres in size and roughly rectangular in shape. The topography is relatively flat with a general slope from south (46.5 mAOD) to north (42.5 mAOD).

AWE Burghfield is an operational site operated by AWE plc to produce explosives, explosive devices and assemble weapons associated with AWE's operations in their capacity to maintain the UK nuclear weapons capability. Consequently, some areas of AWE Burghfield are nuclear licensed.

Access to AWE Burghfield is from the north-west, via a road called 'The Mearings'. AWE Burghfield is surrounded by a high security fence and is subject to strict security controls. The eastern, southern and western edges of AWE Burghfield are bounded by roads.

A small stream, Burghfield Brook, flows along the southern and eastern edges of AWE Burghfield.

2.2 General Description of Project Mensa Area

The Project Mensa Development covers approximately 21.2 hectares and the bulk of the area is situated in the centre of AWE Burghfield. The Project Mensa Development also includes areas at the Main Gate to the northwest of the site, Pingewood Gate to the north east of the site, and access roads linking these three areas. The Mensa site is not within the nuclear licensed area.

2.3 General Description of the Land Surrounding 8S2, 8F2 and 8F3B

2.3.1 Land Surrounding 8S2

The 8S2 area is located in the central northern part of AWE Burghfield and at the time of the investigation, comprised an area of wet clay following the recent demolition of Building 8S2. The area, approximately 85m x 45m in size, was fenced off from the surrounding areas and was being gradually levelled as part of the Phase 2A demolition / groundworks for the Mensa development.

To the north lies Trident Way, to the east is situated Building 801, and the land to the south and west comprises the remainder of the Mensa demolition area.

2.3.2 Land Surrounding 8F2 and 8F3B

The 8F2 and 8F3B area is situated in the central eastern part of AWE Burghfield lying almost totally within the Zone 2 fenced area. The investigation comprised two discrete areas:

- i. A rectangular parcel of land approximately 110m x 35m in size which is predominantly grassed with three mature trees, one building (8F2) and small amounts of concrete and tarmac hardstanding. To the immediate south lies Building 8F3B, whilst the vicinity of the area is predominantly grassed with occasional trees and buildings surrounded by blast bunds. Street 7, running approximately north to south, lies to the east immediately beyond the Zone 2 fence.
- ii. A rectangular parcel of land approximately 30m x 25m in size which is predominantly grassed but includes and area of hardstanding to the east of the Zone 2 fence and part of the Gate 10 building. To the south lies Building 8S5, to the east lies the Zone 2 fence with Street 7 and a car park beyond, whilst the buildings and hardstanding of Zone 4 lies to the north and grassed areas with buildings lie to the west.

3 Ground Investigation Methodology

3.1 Summary of Ground Investigation Siteworks

The sampling locations are provided on *Drawings JER3996-8S8F-001b* and *JER3996-8S8F-002b*. The main element of works comprised the excavation of twenty trial pits, four hand dug pits and five boreholes to investigate the ground conditions at the site.

The intrusive ground investigation works comprised the following work items:

- Provision of an Environment, Health and Safety Plan for the works, including risk assessments and method statements;
- Full time management and supervision of the works by consultants from RPS;
- Support to AWE by qualified staff from RPS to enable a Certificate of Underground Services of all sampling locations to be issued;
- Radiological Screening and Monitoring of all locations by a Health Physics Supervisor to provide radioactivity assurance monitoring to protect staff involved in the survey work prior to and during excavations;
- Implementation of Explosive Safety Management and Ordnance Clearance Regime in order to ensure that any site investigation work is conducted safely with respect to the risk from explosives and buried unexploded ordnance;
- Excavation of 20 trial pits to depths of up to 4mbGL (metres below ground level) or until natural ground was proven to facilitate characterisation of the soil material present at the various sites shown in *Drawings JER3996-8S8F-001b* and -002b, with the collection of soil samples for laboratory radiological, chemical and explosives analysis.
- Shell and Auger drilling of 2 boreholes to a depth of 18.00mbGL and 3 boreholes to a depth of 6.00mbGL, fitted with gas and groundwater monitoring wells to facilitate the characterisation of the underlying groundwater;

- Completion of four hand dug pits to a maximum depth of 1.2mbGL to assess contamination in land drains;
- Analysis for Volatile Organic Compounds (VOCs) in soils using a photoionisation detector (PID) during trial pitting and sampling;
- Radiological, Explosive and Chemical analysis of soil samples as outlined in the Ground Investigation Proposal (*Ref. 1*);
- Three rounds of Gas and Groundwater Level Monitoring to monitor for potentially hazardous ground gases, VOC vapours, gas flow rates and water levels; and
- Topographic Survey to locate trial pit, borehole and hand dug pit sample locations relative to Ordnance Datum and National Grid Reference.

3.2 Investigation Standards

The investigation was set in the context of relevant UK guidance and legislation relating to the pollution of land and controlled waters. The investigation was based on British Standard BS10175:2001 '*Investigation of Potentially Contaminated Sites – Code of Practice'* (*Ref. 2*).

All fieldwork and laboratory analysis was undertaken based on BS5930 (*Ref 3*) and BS1377 (*Ref. 4*).

3.3 Exploratory Hole Location Survey

The co-ordinates and levels of the trial pit positions were surveyed by Engineering Land and Building Surveys Limited following the completion of the site works. All positions and elevations were recorded to ordnance survey grid and are shown on *Drawings JER3996-8S8F-001b* and *-002b*.

3.4 Radiological Surveying and Monitoring

Due to part of AWE Burghfield being operated as a Nuclear Licensed Site, and based on the potential for radiological materials to be present within the ground underlying the site, radiological monitoring was undertaken at each borehole and trial pit position by the RPS Health Physicist for reassurance purposes. The sampling locations were surveyed for radiological activity prior to commencement, and during all site works, to ensure that no significant radiological hazards existed that could represent an unacceptable risk to workers.

3.4.1 Monitoring Equipment

The equipment used for the radiological monitoring comprised the following radiation / contamination survey meters:

- Exploranium GR-135 MinSPEC a hand held Sodium lodide gamma spectrometer;
- NE Electra rate-meter with DP6 probe for detection of alpha and beta radiation.

Valid calibration certificates accompanied all instruments. The Electra/DP6 had been calibrated using, *inter alia*, a natural uranium source, ensuring that the instruments' responses had been determined against the most likely contaminant on the site.

Prior to use, each instrument was subjected to a comprehensive daily functional check.

3.4.2 Operational Monitoring

Pre-screening of all the areas selected for investigation was undertaken utilising the survey meters listed in *Section 3.4.1.* At each of the sampling locations, background readings for the instruments were determined at waist height. Monitoring of the local surface surrounding the location was undertaken prior to work commencing. The observed count-rate was compared with the background count-rate and if the observed count-rate was less than twice the background count-rate it was inferred that the area was free from significant radiological contamination close to the surface. If observed count rate was less than twice background, the sampling operations could commence without restriction.

At no time during the excavation and sampling operations were levels of radioactivity encountered indicative of radiological contamination.

It was not anticipated that any elevated levels of radioactivity would be encountered, however monitoring of excavated material was undertaken at regular intervals

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throughout the sampling process to reinforce the conclusion that the radiological hazards to site staff associated with the works were not significant.

3.4.3 Radiological Survey Results

Operational monitoring results are summarised within Appendix A.

3.5 Intrusive Exploratory Holes

3.5.1 Machine Excavated Trial Pits

During the ground investigation a total of twenty trial pits were excavated up to a maximum depth of 4mbGL using a JCB wheeled excavator.

Throughout the excavation of the trial pits, health physics and explosive ordnance monitoring was undertaken. An Environmental Consultant from RPS logged the arisings and collected soil samples at regular intervals throughout the excavations. Where potentially contaminated materials were identified on a visual and olfactory basis, additional samples were collected and scheduled for appropriate chemical analysis. Upon completion, the trial pits were backfilled with arisings.

Copies of the exploratory hole logs are provided in *Appendix B* and the locations of the Trial Pits are shown on *Drawings JER3996-8S8F-001b* and *-002b*

A summary of the trial pit locations and final depths is provided in Table 3.1.

Trial Pit Location Reference Number	Depth (mbGL)
TP8S-001	3.00
TP8S-002	3.00
TP8S-003	3.00
TP8S-004	3.00
TP8F-001	3.10
TP8F-002	3.00
TP8F-003	2.90
TP8F-004*	1.20
TP8F-005	3.20
TP8F-006	3.40
TP8F-007	3.40

Table 3.1 Summary of Trial Pit Locations and Final Depths

Trial Pit Location Reference Number	Depth (mbGL)
TP8F-008	2.40
TP8F-009	2.90
TP8F-010	3.60
TP8F-011	3.30
TP8F-012*	1.20
TP8F-013	2.60
TP8F-014	2.60
TP8F-015	2.20
TP8F-016 [#]	1.20

* Trial pit terminated due to instability.

[#] Trial pit terminated due to proximity of steam pipe and buried services. Hand pit only.

3.5.2 Boreholes

During the ground investigation a total of five boreholes were drilled. Two boreholes (BH8S-001 and BH8F-003) were drilled to 18.00mbGL and three boreholes (BH8F-001, BH8F-002 and BH8S-002) were drilled to 6.00mbGL using shell and auger drilling equipment.

Copies of the exploratory hole logs are provided in *Appendix B* and the locations of the Boreholes are shown on *Drawings JER3996-8S8F-001b* and *-002b*.

Throughout the drilling of the boreholes, health physics and explosive ordnance monitoring was undertaken by RPS. An Environmental Consultant from RPS logged the arisings and collected soil samples at regular intervals throughout the excavations. Where potentially contaminated materials were identified on a visual and olfactory basis, additional samples were collected and scheduled for appropriate chemical analysis.

Upon completion, gas and groundwater monitoring wells (3 wells to 6mbGL and 2 well to 18mbGL) were installed and the details of which are also shown on the borehole logs.

3.5.3 Soil Gas Monitoring During Drilling and Excavations

A MiniRae field photo-ionisation detector (PID) fitted with an 10.6 eV lamp was used to conduct headspace tests on soil samples during drilling and trial pitting to detect the presence of Volatile Organic Compounds (VOCs). Additional soil samples were collected and analysed when visual or olfactory evidence of organic contamination was noted or considered necessary by the supervising RPS Environmental Consultant. Where elevated concentrations of VOCs were detected, additional soil samples were collected for organic chemical laboratory analysis.

The results of this soil gas monitoring are included on the exploratory logs contained in *Appendix B*.

3.6 Gas Monitoring

Three rounds of gas monitoring of ground gases was undertaken prior to the sampling of groundwater. These rounds took place during the weeks beginning September 1st, 15th and 29th 2008. The monitoring of ground gases was carried out using a calibrated Gas Data LMS XI portable gas analyser and a MiniRae field photo-ionisation detector (PID) fitted with a 10.6 mV lamp. The parameters measured and recorded during the gas monitoring round are as follows:

- Gas Flow Rate (l/hr);
- Well Pressure (Pascals);
- Flammable Gases (as Methane (CH₄), (0-100% v/v);
- Percentage of Lower Explosive Limit (0-100% LEL);
- Carbon Dioxide (CO₂, 0-100% v/v);
- Oxygen (O₂, 0-100% v/v);
- Hydrogen Sulphide (H₂S, ppm);
- Carbon Monoxide (CO, ppm);
- Atmospheric Pressure (mb); and,
- Volatile Organic Compounds (VOCs, ppm).

The gas analyser was flushed with ambient air between monitoring wells to ensure the measurement of accurate results at each well. Weather conditions and atmospheric pressure were recorded at the time of visit. Results of the gas monitoring are provided in *Appendix C*.

3.7 Groundwater Monitoring and Sampling

RPS carried out three rounds of groundwater monitoring at each monitoring well location and these were undertaken in the weeks commencing September 1st, 15th and 29th 2008. Groundwater samples were collected from the new groundwater monitoring wells for laboratory analysis.

Groundwater level monitoring was undertaken following the measurement of ground gases. The following measurements were recorded at all of the monitoring wells;

- The groundwater level (from ground level); and
- The depth to the base of the monitoring well (from ground level).

The results of the groundwater monitoring are provided in Appendix C.

For the collection of groundwater samples, once groundwater levels and monitoring well depths had been recorded, each well was purged of at least three well volumes of standing groundwater, using a portable rotary pump. The sample was then taken using a new plastic, disposable bailer for each well to prevent any cross contamination between wells.

During purging, the following water quality measurements were recorded using purpose-designed instruments, calibrated to the manufacturer's instructions:

- Temperature (°C);
- pH;
- Redox (Eh) (mV);
- Electrical Conductivity (EC) (µS/cm);
- Volatile Organics; and,
- Dissolved Oxygen (DO) (%).

Each parameter was measured until at least three consecutive readings stabilised to within 10% of each other, and once stable conditions were measured, groundwater sampling would commence. The results of the field groundwater quality measurements are presented in *Appendix C*.

In order to undertake the full suite of analysis listed in *Section 3.8.6* to *3.8.8*, over 6 litres of groundwater sample was required.

The sample bottles were filled up to form an inverse meniscus preventing air bubbles forming, minimising the potential loss of volatile gases dissolved in the water. The samples were then placed in laboratory supplied and prepared bottles, labelled at the time of sampling using indelible marker pens and then packed into cool boxes with ice packs.

3.8 Sampling

3.8.1 Soil Sampling

During the site investigation, soil samples considered to be representative of soil conditions were collected from the trial pits, hand pits and boreholes for laboratory analysis. The depth at which soil samples were collected depended upon the analytical program, visual and olfactory field observations and as deemed necessary by the supervising RPS Environmental Consultant. An outline of the sampling strategy is as follows:

- Composite soil samples of the near surface soils were taken were taken for chemical analysis. Each of the samples was representative of the ground conditions encountered and comprised approximately 3kg of material, which was placed into clean airtight polyethylene tubs and amber glass jars as supplied by the laboratory;
- For radiological analysis, three samples for gross alpha/beta analysis were taken between ground level and 0.3mbGL, 0.5-1.0mbGl and 1.0-2.0mbGL in each of the exploratory locations. Samples for tritium analysis were taken at the same time and depth as the first gross alpha/beta sample (ground level to 0.3mbGL) at each of the exploratory locations. Each of the samples were representative of the ground conditions encountered and comprised

approximately 2kg of material, which was placed into clean airtight polyethylene tubs and glass vials as supplied by the laboratory; and

 One composite sample for explosive residue was taken from the top 1m of soil at each of the exploratory locations. Each of the samples were representative of the ground conditions encountered and comprised approximately 0.5kg of material, which was placed into clean airtight glass jars supplied by the laboratory.

Each disturbed soil sample was labelled with a unique reference number together with the project details. Samples were sent to Harwell Scientifics laboratory for radiological analysis, TES Bretby's laboratory for chemical analysis, BAE Systems laboratory for explosive residue analysis.

The soil sample types and depths are presented in the logs in *Appendix B* and the sample codes used on the exploratory logs are provided in *Table 3.2*.

Sample Type Code	Sample Type	
D	Disturbed soil sample including glass amber jars and plastic tubs for chemical analysis.	
E	Disturbed soil sample for radiological analysis.	
Х	Disturbed soil sample for explosive analysis.	
PID	Soil sample PID monitoring.	
BULK or B	Bulk soil sample	

Table 3.2 Summary of Soil Sample Types

3.9 Laboratory Analysis

3.9.1 Introduction

Soil and groundwater samples were analysed for various suites of determinants and any soils and groundwater with visual or olfactory evidence of contamination were scheduled for appropriate analysis.

3.9.2 Soil Explosives Suite

Twenty-eight soil samples considered to be representative of ground conditions at the site were submitted to BAE Systems laboratory, for explosive residue analysis as listed in *Table 3.3*.

Suite 1	Laboratory Detection Limits
НМХ	2.0 mg/kg
RDX	2.0 mg/kg
EDGN	0.1 mg/kg
Tetryl	1.0 mg/kg
HNS	0.5 mg/kg
NG	0.1 mg/kg
TNT	0.5 mg/kg
PETN	5.0 mg/kg
Picrite	0.25 mg/kg
Picric acid	0.1 mg/kg
2,6 DNT	1.0 mg/kg
2,4 DNT	1.0 mg/kg

Table 3.3 Explosive Determinants for Soils

Results of all explosive residue soil analysis are provided in Appendix D.

3.9.3 Radiological Suite For Soils

Seventy-two soil samples considered to be representative of ground conditions at the site were sent to Scientifics laboratory for radiological analysis for the determinants listed in *All samples* were analysed for gross alpha and gross beta determinants, with the provision of limited analysis for radiochemistry, gamma spectrometry and tritium dependent upon the results of the gross alpha and beta analysis.

4. All samples were analysed for gross alpha and gross beta determinants, with the provision of limited analysis for radiochemistry, gamma spectrometry and tritium dependent upon the results of the gross alpha and beta analysis.

Table 3.4 Radiological Determinants

Determinant		
All Samples		
Gross Alpha		
Gross Beta		
Additional Analysis		
Radiochemistry		
Gamma Spectrometry		
Tritium		

In line with AWE's procedures, if gross alpha activity for a sample was greater than 1.1 Bq/g it was scheduled for further radiochemistry analysis and if gross beta exceeded 1.0 Bq/g the sample was submitted for gamma spectrometry analysis. Five samples were scheduled for radiochemistry analysis and 11 samples were scheduled for gamma spectrometry. A random selection of 15 samples were also analysed for tritium analysis for assurance purposes.

Results of all radiological soil analyses are provided in Appendix E.

3.9.4 Soil Chemical Analytical Suites

Soil samples considered to be representative of ground conditions at the site were submitted to UKAS accredited TES Bretby's laboratory, Burton-on-Trent for chemical analysis.

Thirty-one soil samples were scheduled for various chemical contaminant analyses. The soil analysis results are provided in *Appendix F.* A summary of the sampling suite for soil samples is provided in *Table 3.5* below.

Determinant	Laboratory Limits of Detection (LOD) (mg/kg)
Metals – As, Ba, Be, B, Cd, Cr, Cu, Pb, Ni, Se, V & Zn	2 (As), 1 (Ba), 1 (Be), 0.5 (B), 0.1 (Cd), 3 (Cr), 3 (Cu), 3.5 (Pb), 2.5 (Ni), 0.5 (Se), 2.0 (V) & 19.5 (Zn)
Chloride	5
рН	n/a
Acid soluble sulphate	20
Sulphide	0.5
Polyaromatic Hydrocarbons (PAHs) USEPA 17 – Inc Coronene	0.08
Total Petroleum Hydrocarbons (TPH) C5- C40 (Aliphatic/Aromatic split)	10
Fraction Organic Carbon (FOC)	0.02 %
Asbestos Screen	n/a

Table 3.5 Chemical (Basic Suite) Determinants

Two samples from Trial Pit TP8F-012 at depths of 0-0.7mbGl and 1.2mbGL, and one sample from TP8F-009 (0.85m), were sent for additional analysis based on visual and olfactory contamination observed during excavation. The additional analysis is summarised in *Table 3.6* below:

Determinant	Laboratory Limits of Detection (LOD)
Volatile Organic Compounds (VOCs)	5
Semi-Volatile Organic Compounds (SVOCs)	0.2 - 10
Polychlorinated Biphenyls (PCBs)	5
(TP8F-012 samples only)	

Table 3.6 Chemical Determinants (Additional Analysis)

In addition a sample of suspected asbestos cement from Trial Pit TP8F-015 (0.3 mbGL) was submitted for analysis for the presence of asbestos.

3.9.5 Groundwater Explosives Suite

Fifteen groundwater samples from the newly installed boreholes were submitted to BAE Systems laboratory for explosive residue analysis as listed in *Table 3.7*.

Determinant	Laboratory Detection Limits
HMX	<50 ug/l
RDX	<50 ug/l
EDGN	<50 ug/l
Tetryl	<50 ug/l
HNS	<50 ug/l
NG	<50 ug/l
TNT	<50 ug/l
PETN	<50 ug/l
Picrite	<50 ug/l
Picric acid	<50 ug/l
2,6 DNT	<50 ug/l
2,4 DNT	<50 ug/l

Table 3.7 Explosives Determinants for Groundwater

Results of all explosive residue groundwater analysis are provided in Appendix G.

3.9.6 Radiological Suite For Groundwater

Fifteen groundwater samples were submitted to Scientifics laboratory for radiological analysis for the determinants listed in *Table 3.8*. Thirteen samples were scheduled for tritium analysis, and six samples were scheduled for radiochemistry and gamma spectrometry.

Basic Analysis					
Gross Alpha					
Gross Beta					
Additional Analysis					
Radiochemistry					
Gamma Spectrometry					
Tritium					

Table 3.8 Radiological Determinants for Groundwater

Results of all radiological groundwater analysis are provided in Appendix H.

3.9.7 Chemical Analytical Suites For Groundwater

Fifteen groundwater samples, taken during the three rounds of monitoring, were submitted for analysis for various suites of chemical analytes at TES Bretby's laboratory. The groundwater chemical analysis results are provided in *Appendix I*. A summary of the sampling suites for groundwater samples are provided in *Table 3.9*.

Determinant	Laboratory Detection Limits (mg/l)
As, B, Ba, Be, Ca, Cd, Cr, Cu, Hg, Mg, Ni, Pb, Se, Zn	0.001, 0.01, 0.01, 0.01, 1, 0.0001, 0.001, 0.001, 0.0001, 1, 0.001, 0.001, 0.001, 0.002
рН	n/a
Total Sulphur	3
Total Hardness	n/a
Ammoniacal Nitrogen	0.01
Nitrate	0.2
Nitrite	0.01
Phosphate	0.01
Total Organic Carbon	0.1
PAH	0.01
ТРН	0.01

Table 3.9 Chemical Determinants for Groundwater

Four soil samples were submitted for soil leachate analysis to assess the mobility of metal contaminants in the soil. The results of this analysis are included in *Appendix F*.

3.10 QA/QC Sampling Protocols

3.10.1 Sampling Storage and Transportation

With the exception of the radiological and geotechnical samples, all samples were stored and transported in cool boxes with ice packs to ensure a nominal temperature of + $4^{\circ}C \pm 2^{\circ}C$. Samples were delivered to BAE Systems for explosive residue analysis, TES Bretby's laboratory, Burton-upon-Trent, for chemical analysis, and Scientifics Laboratory, Harwell for radiological analysis.

4 References

1. RPS Ground Investigation Proposal – Project Mensa Additional Site Investigation of Land Surrounding Buildings 8S2, 8F2 and 8F3B, AWE Burghfield. RPS Ref. JER3996/MENSA/8S8F/GI/Q1, May 2008;

2. BS10175; Code of Practice for Investigation Potentially Contaminated Sites, 2001;

3. BS5930: Code of Practice for Site Investigations, 1999;

4. BS1377: Methods of Tests for Soils for Civil Engineering Purposes. General Requirements and Sample Preparation, 1990.

Drawings



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	LE	GEN	ND				
		Bu	uilding 8S2E / 8S2W Foot	print			
		Me	ensa Application Area				
		Pr	oposed Energy Centre				
		Ph	ase 2A Demolition Area				
		C	MR Area				
	In۱	/esti	gation Locations				
\square	-	Bo	orehole with Monitoring W	ell (De	ep)		
	4	Bc	orehole with Monitoring W	ell (Sh	allow)		
		Hand Dug Pit					
	-	🗕 Tri	ial Pit				
	Pr	evio	us Investigation I	ocat	ions		
	Ga	te 22	Investigation (2006)	.0041	10113		
	-	 -∋ Tri	ial Pit				
	Ph	ase 2	A Demolition Area LG	A (20	05)		
	4	Bc	prehole with Monitoring W	ell (De	ep)		
	Probebole with Monitoring Well						
			adiment Sample				
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.)							
	в	17/09/08	Surveyed Locations, 2008 Basemap	RJ	GM		
	A Rev:	07/08/08 Date:	Various Changes (See Original) Amendment:	RJ Name:	GM Checked:		
	-	Data So	urce: RPS 2008				
		Status:	PRELIMINARY				
	•	D	DS				
		Conrad Ho	use Beaufort Square Chepstow Monmou	thshire NP	16 5EP		
		T 01235 8	38200 F 01235 820351 E rpsox@rpsgroup.	com W ww	w.rpsplc.co.uk		
		Project:	Mensa Additional Ground Inve	estigatio	n		
		Title:	Sampling Locations for	_			
٢.			Buildings 8S2E & 8S2W	/			
-	ĺ	Scale: A	3 @ 1:500 0.01 0.02km		Å		
		Date: 02	2/05/2005 Datum: OSGB36 I	Projection	: BNG		
		Drawn:	RJ Checked: SJ	Job Ref:	JER3996		
	-	Figure	No: JER3996-8S8F-001 k) Revisi	on: B		



\sim	LE	GEN	D				
		Buil	dings 8F	2 & 8F3B (Inv	vestigatio	on Area	Extent)
		Mer	nsa Appli	cation Area			
		Pha	se 2A De	emolition Area	a		
		Bur	ghfield B	rook (Former	Course)		
		App on E	roximate 3GS 1:10	Extent of All	uvium Bo y Map	oundary	,
	Inv	estiq	ation	Location	S		
1 /		Bore	ehole		-		
7 /		Tria	l Pit				
	Pre	vious	s Inve	stigation	locati	ons	
	Gat	e 22 Ir	ivestia	ation (2006))	<u>•</u>	
		Tria	l Pit				
1 1	Pha	ise 2A	Demol	ition Area L	.QA (20	05)	
1	•	Bore	ehole wit	h Monitorina	Well (De	ep)	
	ф (Bore	ehole wit	h Monitorina	Well (Sh	allow)	
		Pro	bobolo w	ith Monitoring		,	
					y wen		
/	•	Geo	technica	I Borehole			
$C_{\mathcal{A}}$		l ria	l Pit				
	-	Sed	liment Sa	ample		,	
	Gas	Ring		ivestigatioi	1 (2004)	
				antine Cum		A (200)	2 2004
			aracteri	h Monitoring		4 (200.	3-2004)
	Pur	Dult		n Monitoring	vven	021	
>	Биі	Bor		k investigat	1011 (20	03)	
	Ý	Don					
/							
-1	В	17/09/08	Surveyed L	ocations, 2008 Base	emap	RJ	GM
· / ()	A	07/08/08	Various Cha	anges (See Original)		RJ	GM Chackad:
$\overline{}$		Data So	urce: RP	S 2008		Name.	Checked.
1		Status:	PRELIN	IINARY			
/ /		R	PS				
		Conrad Ho	use Beaufo	rt Square Chepstow	Monmouth	nshire NP1	6 5EP
	-	Client:	AWF Pl	235 820351 E rpsox	c@rpsgroup.c	om v ww	w.rpspic.co.uk
		Project:	Mensa A	- Additional Gro	und Inve	stigatior	า
		Title	Sampl	ing Locatio	ns for		
		litle:	Buildin	igs 8F2 & 8	F3B		
		Scale: A	3 @ 1:750	015	0.03 km		N
		<u> </u>		1			M
		Date: 02	2/05/2005	Datum: OSG	B36 P	rojection	BNG
		Drawn:	кJ	Checked: SJ	J	oo Ref: J	EK3996
		Figure	No: JER	3996-8581	F-002b	Revisio	on: B

Appendices

Appendix A

Operational Radiological Monitoring Results

RPS HEALTH PHYSICS MONITORING FORM FOR BOREHOLES / TRIAL PITS						
DATE	27/08/08	27/08/08 BOREHOLE / TRIAL PIT REFERENCE NUMBER				
INSTRUMENT TYPE	INSTRUMENT MODEL	RUMENT SERIEL CALIBRATION DDEL NUMBER DATE			Ground Dings	
Dose Rate Meter	GR-130	9765	Due 27 th May 2009	42 – 69 cp		
					μSv/hr	
	-		► teth t	a (cps)	β (cps)	
Ratemeter + Probe	Electra	288	Due 10 June 2009	0		
	DP6	2765	Due 10 th June 2009		6 – 8	

Surface Monitoring	Dose Rate	Contamination		
	(μSv/hr)	α (cps)	β (cps)	gamma (cps)
		0	6 – 8	46 - 68
		•	•••	

Material Surveyed	Depth	Dose Rate	Contamination		on
(Made Ground, Clay etc)	(mbGL)	(μSv/hr)	α (cps)	β (cps)	gamma (cps)
Spoil	0.5		0	6 – 8	44 – 68
Spoil	1.0		0	6 – 8	51 – 73
Spoil	1.5		0	6 – 8	56 - 80
Spoil	2.0		0	6 – 8	59 – 85
Spoil	2.5		0	6 – 8	48 – 74
Spoil	3.0		0	6 – 8	49 – 81
Spoil	3.5		0	6 – 8	53 – 87
Spoil	4.0		0	6 – 8	55 – 91
Spoil	4.5		0	6 – 8	61 – 104
Spoil	5.0		0	6 – 8	67 – 99
Spoil	5.5		0	6 - 8	65 – 101
Spoil	6.0		0	6 - 8	72 – 106

Ancillary Equipment (drill rig, tools etc)	Dose Rate	Contamination		
	(μ Sv/hr)	a (cps)	β (cps)	

Additional Comments/Actions

All samples recorded at background activity levels

Monitors Name	T. Baker	Monitors	
(print)		Signature	

HEALTH PHYSICS MONITORING FORM					
RPS	FOR BORE	HOLES /	<u>TRIAL PITS</u>		
DATE	12/08/08	BOREH REFER	IOLE / TRIAL PIT RENCE NUMBER	BH8	F-002
INSTRUMENT TYPE	INSTRUMENT MODEL	NT SERIEL CALIBRATION NUMBER DATE			GROUND DINGS
Dose Rate Meter	GR-130	9765	Due 27 th May 2009	71 – 94 cp	
Bose Rate Meter					μSv/hr
	Flaster	000	Due do th lune 0000	a (cps)	β (cps)
Ratemeter + Probe	Electra	288	Due 10 June 2009	0	
	DP6	2765	Due 10 th June 2009		5 – 9

Surface Monitoring	Dose Rate	Contamination		
	(μSv/hr)	α (cps)	β (cps)	gamma (cps)
		0		
		U		

Material Surveyed	Depth	Dose Rate	Co	ontamination		
(Made Ground, Clay etc)	(mbGL)	(μSv/hr)	α (cps)	β (cps)	gamma (cps)	
Spoil	0.6		0	5 – 7	78 – 95	
Spoil	1.0		0	5 – 7	64 – 92	
Spoil	1.4		0	5 – 8	68 – 89	
Spoil	2.0		0	6 – 8	65 – 87	
Spoil	2.5		0	5 – 9	71 – 92	
Spoil	3.0		0	6 – 9	75 – 94	
Spoil	3.5		0	5 – 8	74 – 91	
Spoil	4.0		0	5 – 7	72 – 89	
Spoil	4.5		0	6 – 8	69 – 86	
Spoil	5.0		0	6 – 9	71 – 93	
Spoil	5.5		0	6 – 8	74 – 95	
Spoil	6.0		0	6 – 8	73 – 91	

Ancillary Equipment (drill rig, tools etc)	Dose Rate	Contamination		
	(µSv/hr)	a (cps)	β (cps)	

Additional Comments/Actions

All samples recorded at background activity levels

Monitors Name	T. Baker	Monitors	
(print)		Signature	

HEALTH PHYSICS MONITORING FORM						
RPS	FOR BORE	HOLES /	<u>TRIAL PITS</u>			
DATE	12/08/08	BOREH REFER	IOLE / TRIAL PIT RENCE NUMBER	BH8	F-003	
INSTRUMENT TYPE	INSTRUMENT MODEL	SERIEL NUMBER	CALIBRATION DATE	BACKGROUND READINGS		
Dose Rate Meter	GR-130	9765	Due 27 th May 2009	70 – 96 cp		
Dose Nate Meter					μSv/hr	
			Due do th have cooo	a (cps)	β (cps)	
Ratemeter + Probe	Electra	288	Due 10 June 2009	0		
	DP6	2765	Due 10 th June 2009		5 – 7	

Surface Monitoring	Dose Rate	Contamination		
	(μSv/hr)	α (cps)	β (cps)	gamma (cps)
		0	5 – 7	71 – 98
		-		

Material Surveyed	Depth Dose Rate		Contamination		
(Made Ground, Clay etc)	(mbGL)	(µSv/nr)	α (cps)	β (cps)	gamma (cps)
Spoil	0.3		0	5 – 7	69 – 85
Spoil	0.5		0	5 – 8	65 – 86
Spoil	1.0		0	6 - 8	70 – 91
Spoil	1.5		0	5 – 7	68 – 93
Spoil	2.0		0	5 – 7	64 – 87
Spoil	2.5		0	6 – 8	72 – 94
Spoil	3.0		0	5 – 8	69 – 87
Spoil	3.5		0	5 – 9	71 – 92
Spoil	4.0		0	6 – 9	67 – 85
Spoil	4.5		0	5 – 8	65 – 87
Spoil	5.0		0	5 – 9	74 – 93
Spoil	5.5		0	6 – 8	68 - 82
Spoil	6.0		0	6 – 9	75 – 109
Spoil	6.5		0	6 – 9	74 – 106
Spoil	7.0		0	6 – 9	73 – 104
Spoil	7.5		0	6 – 9	69 – 101

Material Surveyed	Depth	Dose Rate	Contamination		on
(Made Ground, Clay etc)	(mbGL)	(μSv/hr)	α (cps)	β (cps)	gamma (cps)
Spoil	8.0		0	6 – 9	75 – 103
Spoil	8.5		0	6 - 8	71 – 99
Spoil	9.0		0	5 – 9	73 – 101
Spoil	9.5		0	6 – 9	69 – 98
Spoil	10.0		0	6 – 9	72 – 104
Spoil	11.0		0	6 – 9	77 – 101
Spoil	12.0		0	7 – 9	75 – 98
Spoil	13.0		0	7 – 9	81 – 107
Spoil	14.0		0	7 – 9	79 – 104
Spoil	15.0		0	7 – 9	76 – 99
Spoil	16.0		0	7 – 9	74 – 88
Spoil	17.0		0	7 – 9	76 – 92
Spoil	18.0		0	7 – 9	72 – 95

Ancillary Equipment (drill rig, tools etc)) Dose Rate (μSv/hr)		Contamination		
				α (eps)	β (cps)
DATE		BOREHOLE / TRIAL PIT REFERENCE NUMBER				

Additional Comments/Actions

All samples recorded at background activity levels

Monitors Name	T. Baker	Monitors	
(print)		Signature	

HEALTH PHYSICS MONITORING FORM						
RPS	FOR BORE	HOLES /	<u>TRIAL PITS</u>			
DATE	18/08/08	BOREH REFER	IOLE / TRIAL PIT RENCE NUMBER	BH8	S-001	
INSTRUMENT TYPE	INSTRUMENT MODEL	SERIEL NUMBER	CALIBRATION DATE	BACKGROUND READINGS		
Dose Rate Meter	GR-130	9765	Due 27 th May 2009	92 – 109 c		
Dose Nate Meter					μSv/hr	
			Due to th have eeee	a (cps)	β (cps)	
Ratemeter + Probe	Electra	288	Due 10 June 2009	0		
	DP6	2765	Due 10 th June 2009		6 – 8	

Surface Monitoring	Dose Rate	Contamination			
	(μSv/hr)	α (cps)	β (cps)	gamma (cps)	
		0			
		U			

Material Surveyed	Depth Dose Rate		Contamination		
(Made Ground, Clay etc)	(mbGL)	(μSv/hr)	α (cps)	β (cps)	gamma (cps)
Clay	0.5		0	6 – 8	91 – 114
Clay	1.0		0	6 – 8	86 – 108
Clay	1.5		0	6 – 8	95 – 125
Clay	2.0		0	6 – 8	89 – 103
Clay	2.5		0	6 – 9	92 – 111
Clay	3.0		0	6 – 8	86 – 105
Clay	3.5		0	6 – 8	82 – 101
Clay	4.0		0	6 – 9	87 – 104
Clay	4.5		0	6 – 9	91 – 112
Clay	5.0		0	6 – 9	83 – 103
Clay	5.5		0	6 – 9	72 – 105
Clay	6.0		0	6 – 9	94 – 109
Clay	7.0		0	6 – 9	86 – 115
Clay	8.0		0	6 – 9	84 – 108
Clay	9.0		0	6 – 9	76 – 110
Clay	10.0		0	6 – 9	92 – 113
Material Surveyed	Depth	Depth Dose Rate	Co	ontaminati	on
-------------------------	--------	-----------------	---------	----------------	-------------
(Made Ground, Clay etc)	(mbGL)	(μSv/hr)	α (cps)	β (cps)	gamma (cps)
Clay	11.0		0	6 – 9	82 – 105
Clay	12.0		0	6 – 9	88 – 108
Clay	13.0		0	6 – 9	79 – 101
Clay	14.0		0	6 – 9	83 – 115
Clay	15.0		0	6 – 9	91 – 107
Clay	16.0		0	6 – 9	87 – 112
Clay	17.0		0	6 – 9	95 – 117
Clay	18.0		0	6 – 9	86 – 109

Ancillary Equipment (drill rig, tools etc)		•	Dose Rate	Contamination		
		'	(μSv/hr)	α (cps)	β (cps)
DATE		BOREHOLE / TRIAL PIT REFERENCE NUMBER				

Monitors Name	T. Baker	Monitors	
(print)		Signature	

RPS HEALTH PHYSICS MONITORING FORM FOR BOREHOLES / TRIAL PITS					
DATE	18/08/08	BOREH	IOLE / TRIAL PIT RENCE NUMBER	BH8S-002	
INSTRUMENT TYPE	INSTRUMENT MODEL	SERIEL NUMBER	CALIBRATION DATE	BACKO REA	GROUND DINGS
Dose Rate Meter	GR-130	9765	Due 27 th May 2009	91 – 109 c	
					μSv/hr
	-		► teth t	a (cps)	β (cps)
Ratemeter + Probe	Electra	288	Due 10 June 2009	0	
Katemeter + Probe	DP6	2765	Due 10 th June 2009		8 – 10

Surface Monitoring	Dose Rate	Contamination		
	(μSv/hr)	α (cps)	β (cps)	gamma (cps)
		0	8 – 10	90 – 110
		•	• ••	

Material Surveyed	Depth	Dose Rate	Co	ontaminati	on
(Made Ground, Clay etc)	(mbGL)	(μSv/hr)	α (cps)	β (cps)	gamma (cps)
Spoil	1.0		0	8 – 10	93 – 112
Spoil	1.5		0	8 – 10	88 – 109
Spoil	2.0		0	8 – 10	90 – 115
Spoil	2.5		0	8 – 10	94 – 118
Spoil	3.0		0	8 – 10	98 – 121
Spoil	3.5		0	8 – 10	85 – 103
Spoil	4.0		0	8 – 10	91 – 106
Spoil	4.5		0	8 – 10	87 – 99
Spoil	5.0		0	8 – 10	96 – 124
Spoil	5.5		0	8 – 10	92 – 111
Spoil	6.0		0	8 – 10	94 – 118
Spoil	6.5		0	8 – 10	101 – 124

Ancillary Equipment (drill rig, tools etc)	Dose Rate	Contamination		
	(μ Sv/hr)	a (cps)	β (cps)	

Monitors Name	T. Baker	Monitors	
(print)		Signature	

HEALTH PHYSICS MONITORING FORM						
RPS	FOR BORE	FOR BOREHOLES / TRIAL PITS				
DATE	18/08/08	BOREH REFER	IOLE / TRIAL PIT RENCE NUMBER	HP8	S-001	
INSTRUMENT TYPE	INSTRUMENT MODEL	SERIEL NUMBER	CALIBRATION DATE	BACKO REA	Ground Dings	
Dose Rate Meter	GR-130	9765	Due 27 th May 2009	86 – 101 cp		
Dose Rate Meter					μSv/hr	
			Due do th have cooo	a (cps)	β (cps)	
Ratemeter + Probe	Electra	288	Due 10 June 2009	0		
Katemeter + Probe	DP6	2765	Due 10 th June 2009		7 – 9	

Surface Monitoring	Dose Rate	Contamination		
	(μSv/hr)	α (cps)	β (cps)	gamma (cps)
		0	7 – 9	89 – 104

Material Surveyed	Depth Dose Rate	Material Surveyed Depth Dose Ra			ontaminati	on
(Made Ground, Clay etc)	(mbGL)	(μSv/hr)	α (cps)	β (cps)	gamma (cps)	
Clay	0.8		0	7 – 9	78 – 95	

Ancillary Equipment (drill rig, tools etc)	Dose Rate	Contamination		
	(μ Sv/hr)	a (cps)	β (cps)	

DATE	BOREHOLE / TRIAL PIT	
	REFERENCE NUMBER	

Monitors Name	T. Baker	Monitors	
(print)		Signature	

HEALTH PHYSICS MONITORING FORM					
RPS	FOR BOREHOLES / TRIAL PITS				
DATE	18/08/08	BOREH REFER	IOLE / TRIAL PIT RENCE NUMBER	HP8	S-002
INSTRUMENT TYPE	INSTRUMENT MODEL	SERIEL NUMBER	CALIBRATION DATE	BACKO REA	Ground Dings
Dose Rate Meter	GR-130	9765	9765 Due 27 th May 2009		: – 114 cps
Dose Rate Meter					μSv/hr
		000	Due do th lune 0000	a (cps)	β (cps)
Ratemeter + Probe	Electra	288	Due 10 June 2009	0	
	DP6	2765	Due 10 th June 2009		7 – 9

	Dose Rate	Contamination		
Surface Monitoring	(μSv/hr)	α (cps)	β (cps)	gamma (cps)
Surface Monitoring		0	7 – 9	95 – 119

Material Surveyed	Depth	Dose Rate	Co	ontaminati	on
(Made Ground, Clay etc)	(mbGL)	(μSv/hr)	α (cps)	β (cps)	gamma (cps)
Clay	0.9		0	7 – 9	92 – 115

Ancillary Equipment (drill rig, tools etc)	Dose Rate	Contamination		
	(μSv/hr)	a (cps)	β (cps)	

DATE	BOREHOLE / TRIAL PIT	
	REFERENCE NUMBER	

Monitors Name	T. Baker	Monitors	
(print)		Signature	

HEALTH PHYSICS MONITORING FORM					
RPS	FOR BOREHOLES / TRIAL PITS				
DATE	18/08/08	BOREH REFER	IOLE / TRIAL PIT RENCE NUMBER	HP8	S-003
INSTRUMENT TYPE	INSTRUMENT MODEL	SERIEL NUMBER	CALIBRATION DATE	BACKO REA	Ground Dings
Dose Rate Meter	GR-130	9765	Due 27 th May 2009	09 86 - 10	
Bose Rate Meter					μSv/hr
			Due do th have cooo	a (cps)	β (cps)
Ratemeter + Probe	Electra	288	Due 10 June 2009	0	
Ratemeter + Probe	DP6	2765	Due 10 th June 2009		7 – 9

	Dose Rate	Contamination		
Surface Monitoring	(μSv/hr)	α (cps)	β (cps)	gamma (cps)
Surface Monitoring		0	7 – 9	84 – 106

Material Surveyed	Depth (mbGL)	Dose Rate	Co	ontaminati	on
(Made Ground, Clay etc)	(mbGL)	(μSv/hr)	α (cps)	β (cps)	gamma (cps)
Clay	0.8		0	7 – 9	89 – 114

Ancillary Equipment (drill rig, tools etc)	Dose Rate	Contamination		
	(μ Sv/hr)	a (cps)	β (cps)	

DATE	BOREHOLE / TRIAL PIT	
	REFERENCE NUMBER	

Monitors Name	T. Baker	Monitors	
(print)		Signature	

HEALTH PHYSICS MONITORING FORM					
RPS	FOR BOREHOLES / TRIAL PITS				
DATE	14/08/08	BOREH REFER	IOLE / TRIAL PIT RENCE NUMBER	TP8	F-001
INSTRUMENT TYPE	INSTRUMENT MODEL	SERIEL CALIBRATION NUMBER DATE		BACKO REA	Ground Dings
Dose Rate Meter	GR-130	9765 Due 27 th May 2009		7	0 – 92 cps
					μSv/hr
		000	Due do th lune 0000	a (cps)	β (cps)
Ratemeter + Probe	Electra	288	Due 10 June 2009	0	
	DP6	2765	Due 10 th June 2009		6 – 8

	Dose Rate	Contamination		
Surface Monitoring	(μSv/hr)	α (cps)	β (cps)	gamma (cps)
Surface Monitoring		0	6 – 8	68 - 90
		•	•••	

Material Surveyed	Depth	Dose Rate (μSv/hr)	Contamination		
(Made Ground, Clay etc)	(mbGL)		α (cps)	β (cps)	gamma (cps)
Clay	0.5		0	6 – 8	71 – 92
Clay	1.1		0	6 - 8	76 – 109
Clay	2.8		0	6 – 9	87 – 108

Ancillary Equipment (drill rig, tools etc)	Dose Rate (μSv/hr)	Contamination		
		a (cps)	β (cps)	

Monitors Name	T. Baker	Monitors	
(print)		Signature	

HEALTH PHYSICS MONITORING FORM					
RPS	FOR BOREHOLES / TRIAL PITS				
DATE	14/08/08	BOREH REFER	IOLE / TRIAL PIT RENCE NUMBER	TP8	F-002
INSTRUMENT TYPE	INSTRUMENT MODEL	SERIEL CALIBRATION NUMBER DATE		BACKO REA	Ground Dings
Dose Rate Meter	GR-130	9765 Due 27 th May 2009		7	0 – 95 cps
				μSv/hr	
			Day doth tags 0000	a (cps)	β (cps)
Ratemeter + Probe	Electra	288	Due 10 June 2009	0	
	DP6	2765	Due 10 th June 2009		6 – 8

	Dose Rate	Contamination		
Surface Monitoring	(μSv/hr)	α (cps)	β (cps)	gamma (cps)
Surface Monitoring		0	6 – 8	68 - 92
		v	•••	00 02

Material Surveyed	Depth	Dose Rate	Contamination		
(Made Ground, Clay etc)	(mbGL)	(μSv/hr)	α (cps)	β (cps)	gamma (cps)
Soil & Clay	0.3		0	6 – 8	71 – 91
Clay	0.6		0	6 - 8	69 - 89
Clay	1.8		0	7 – 9	86 – 126
Clay	3.0		0	7 – 9	92 – 123

Ancillary Equipment (drill rig, tools etc)	Dose Rate	Contamination		
	(μ Sv/hr)	a (cps)	β (cps)	

Monitors Name	T. Baker	Monitors	
(print)		Signature	

HEALTH PHYSICS MONITORING FORM					
RPS	FOR BOREHOLES / TRIAL PITS				
DATE	14/08/08	BOREH REFER	IOLE / TRIAL PIT RENCE NUMBER	TP8F-003	
INSTRUMENT TYPE	INSTRUMENT MODEL	SERIEL NUMBER	CALIBRATION DATE	BACKGROUND READINGS	
Dose Rate Meter	GR-130	9765	Due 27 th May 2009	76 – 95 cp:	
Bose Rate Meter					μSv/hr
		200	Due 40 th lune 2000	a (cps)	β (cps)
Ratemeter + Probe	Electra	288	Due 10 June 2009	0	
Ratemeter + Prope	DP6	2765	Due 10 th June 2009		7 – 9

Surface Monitoring	Dose Rate	Contamination		
	(μSv/hr)	α (cps)	β (cps)	gamma (cps)
		0	7 – 9	75 - 98
		Ŭ		10 00

Material Surveyed	Depth	Dose Rate	Co	Contamination		
(Made Ground, Clay etc)	(mbGL)	(μSv/hr)	α (cps)	β (cps)	gamma (cps)	
Clay	0.3		0	7 – 9	72 – 96	
Clay	0.5		0	7 – 9	78 – 99	
Clay	1.15		0	7 – 9	83 – 106	
Clay	2.9		0	7 – 9	91 – 118	

Ancillary Equipment (drill rig. tools etc)	Dose Rate	Contamination		
Anomaly Equipment (and hig, tools etc)	(μSv/hr)	a (cps)	β (cps)	

Monitors Name	T. Baker	Monitors	
(print)		Signature	

HEALTH PHYSICS MONITORING FORM					
RPS	FOR BOREHOLES / TRIAL PITS				
DATE	13/08/08	BOREH REFER	IOLE / TRIAL PIT RENCE NUMBER	TP8F-004	
INSTRUMENT TYPE	INSTRUMENT MODEL	SERIEL NUMBER	CALIBRATION DATE	BACKGROUND READINGS	
Dose Rate Meter	GR-130	9765	Due 27 th May 2009	69 – 91 cp	
Dose Rate Meter					μSv/hr
		000	Due do th lune 0000	a (cps)	β (cps)
Ratemeter + Probe	Electra	288	Due 10 June 2009	0	
Ratemeter + Prope	DP6	2765	Due 10 th June 2009		5 – 7

Surface Monitoring	Dose Rate	Dose Rate Contamin		on
	(μSv/hr)	α (cps)	β (cps)	gamma (cps)
		0	5 - 7	66 - 83
		Ŭ	• ·	

Material Surveyed	Depth	Dose Rate	Contamination			
(Made Ground, Clay etc)	(mbGL)	(μSv/hr)	α (cps)	β (cps)	gamma (cps)	
Soil	0.5		0	5 – 7	71 – 84	
Clay	1.2		0	6 – 8	74 – 80	

Ancillary Equipment (drill rig, tools etc)	Dose Rate	Contamination		
	(μSv/hr)	a (cps)	β (cps)	

Monitors Name	T. Baker	Monitors	
(print)		Signature	

HEALTH PHYSICS MONITORING FORM					
RPS	FOR BOREHOLES / TRIAL PITS				
DATE	12/08/08	BOREH REFER	IOLE / TRIAL PIT RENCE NUMBER	TP8F-005	
INSTRUMENT TYPE	INSTRUMENT MODEL	SERIEL NUMBER	CALIBRATION DATE	BACKGROUND READINGS	
Dose Rate Meter	GR-130	9765	Due 27 th May 2009	71 – 92 cp	
Bose Rate Meter					μSv/hr
	Flaster	000	Due do th lune 0000	a (cps)	β (cps)
Ratemeter + Probe	Electra	288	Due 10 June 2009	0	
Ratemeter + Prope	DP6	2765	Due 10 th June 2009		6 – 9

Surface Monitoring	Dose Rate	Contamination		
	(μSv/hr)	α (cps)	β (cps)	gamma (cps)
		0	5 - 8	69 - 98
		•	00	00 00

Material Surveyed	Depth	Dose Rate	Contamination			
(Made Ground, Clay etc)	(mbGL)	(μSv/hr)	α (cps)	β (cps)	gamma (cps)	
Clay	1.0		0	5 – 8	67 – 97	
Clay	1.5		0	6 – 9	63 – 91	
Clay	2.4		0	6 – 9	73 – 96	
Clay	3.0		0	6 – 9	78 – 105	

Ancillary Equipment (drill rig, tools etc)	Dose Rate	Contamination		
	(μSv/hr)	a (cps)	β (cps)	

Monitors Name	T. Baker	Monitors	
(print)		Signature	

HEALTH PHYSICS MONITORING FORM					
RPS	FOR BORE	FOR BOREHOLES / TRIAL PITS			
DATE	12/08/08	BOREH REFER	IOLE / TRIAL PIT RENCE NUMBER	TP8	F-006
INSTRUMENT TYPE	INSTRUMENT MODEL	SERIEL NUMBER	CALIBRATION DATE	BACKO REA	Ground Dings
Dose Rate Meter	GR-130	9765	Due 27 th May 2009	79 – 108 cp	
Bose Rate Meter					μSv/hr
		000	Due do th lune 0000	a (cps)	β (cps)
Ratemeter + Probe	Electra	288	Due 10 June 2009	0	
	DP6	2765	Due 10 th June 2009		5 – 7

	Dose Rate	Contamination		
Surface Monitoring	(μSv/hr)	α (cps)	β (cps)	gamma (cps)
Surface Monitoring		0	5 - 7	75 – 110
		Ŭ	• ·	10 110

Material Surveyed	Depth Dose Rate	Contamination			
(Made Ground, Clay etc)	(mbGL)	(μSv/hr)	α (cps)	β (cps)	gamma (cps)
Clay	0.3		0	5 – 7	78 – 106
Clay	0.6		0	5 – 8	98 – 141
Clay	0.9		0	6 – 9	81 – 101
Clay	1.4		0	6 – 8	79 – 112
Clay	1.8		0	5 – 8	82 – 104
Blue clay	2.4		0	7 – 10	87 – 159
Blue clay	3.2		0	7 – 10	86 – 144

Ancillary Equipment (drill rig, tools etc)	Dose Rate	Contamination		
	(μSv/hr)	a (cps)	β (cps)	

DATE	BOREHOLE / TRIAL PIT	
		REFERENCE NUMBER

Monitors Name	T. Baker	Monitors	
(print)		Signature	

HEALTH PHYSICS MONITORING FORM					
RPS	FOR BORE	FOR BOREHOLES / TRIAL PITS			
DATE	13/08/08	BOREH REFER	IOLE / TRIAL PIT RENCE NUMBER	TP8	F-007
INSTRUMENT TYPE	INSTRUMENT MODEL	SERIEL NUMBER	CALIBRATION DATE	BACKO REA	GROUND DINGS
Dose Rate Meter	GR-130	9765	Due 27 th May 2009	72 – 99 cp	
Bose Rate Meter					μSv/hr
	Flaster	000	Due do th lune 0000	a (cps)	β (cps)
Ratemeter + Probe	Electra	288	Due 10 June 2009	0	
	DP6	2765	Due 10 th June 2009		5 – 8

	Dose Rate	Contamination		
Surface Monitoring	(μSv/hr)	α (cps)	β (cps)	gamma (cps)
Surface Monitoring		0	5 – 8	74 – 101

Material Surveyed	Depth Dose Rate		Contamination			
(Made Ground, Clay etc)	(mbGL)	(μSv/hr)	α (cps)	β (cps)	gamma (cps)	
Spoil and Clay	0.5		0	5 – 8	76 – 103	
Clay	0.9		0	6 – 9	78 – 101	
Clay	1.9		0	6 – 9	75 – 109	
Clay	3.4		0	6 – 9	76 – 111	

Ancillary Equipment (drill rig, tools etc)	Dose Rate	Contamination		
	(μSv/hr)	a (cps)	β (cps)	

Monitors Name	T. Baker	Monitors	
(print)		Signature	

HEALTH PHYSICS MONITORING FORM					
RPS	FOR BORE	HOLES /	<u>TRIAL PITS</u>		
DATE	14/08/08	BOREH REFER	IOLE / TRIAL PIT RENCE NUMBER	TP8	F-008
INSTRUMENT TYPE	INSTRUMENT MODEL	SERIEL NUMBER	CALIBRATION DATE	BACKO REA	GROUND DINGS
Dose Rate Meter	GR-130	9765 Due 27 th May 2009		68 – 95 cps	
					μSv/hr
			Due do th have oppo	a (cps)	β (cps)
Ratemeter + Probe	Electra	288	Due 10 June 2009	0	
	DP6	2765	Due 10 th June 2009		6 – 8

	Dose Rate	Contamination		
Surface Monitoring	(μSv/hr)	α (cps)	β (cps)	gamma (cps)
Surface Monitoring		0	6 – 8	69 - 98
		•	•••	

Material Surveyed	Depth Dose Rate		Co	ontaminati	on
(Made Ground, Clay etc)	(mbGL)	(μSv/hr)	α (cps)	β (cps)	gamma (cps)
Soil	0.5		0	6 – 8	65 – 88
Clay	1.0		0	6 – 8	68 – 79
Clay	1.7		0	6 – 8	73 – 104
Clay	2.4		0	6 – 9	81 – 110

Ancillary Equipment (drill rig, tools etc)	Dose Rate	Contamination		
	(μSv/hr)	a (cps)	β (cps)	

ПАТЕ		BOREHOLE / TRIAL PIT	
DATE	REFERENCE NUMBER		

Monitors Name	T. Baker	Monitors	
(print)		Signature	

HEALTH PHYSICS MONITORING FORM					
RPS	FOR BORE	HOLES /	<u>TRIAL PITS</u>		
DATE	14/08/08	BOREH REFER	IOLE / TRIAL PIT RENCE NUMBER	TP8	F-009
INSTRUMENT TYPE	INSTRUMENT MODEL	SERIEL NUMBER	CALIBRATION DATE	BACKO REA	Ground Dings
Dose Rate Meter	GR-130	9765 Due 27 th May 2009		68 – 100 cps	
Bose Rate Meter					μSv/hr
			Due do th have cooo	a (cps)	β (cps)
Ratemeter + Probe	Electra	288	Due 10 June 2009	0	
	DP6	2765	Due 10 th June 2009		6 – 8

	Dose Rate	Contamination		
Surface Monitoring	(μSv/hr)	α (cps)	β (cps)	gamma (cps)
Surface Monitoring		0	6 – 8	71 – 98
		Ŭ	•••	11 50

Material Surveyed	Depth	Dose Rate	Co	ontaminati	on
(Made Ground, Clay etc)	(mbGL)	(μSv/hr)	α (cps)	β (cps)	gamma (cps)
Clay	0.3		0	6 – 8	69 – 99
Clay	1.0		0	6 – 8	78 – 104
Clay	2.7		0	7 – 9	84 – 127

Ancillary Equipment (drill rig, tools etc)	Dose Rate	Contamination		
	(μSv/hr)	a (cps)	β (cps)	

Monitors Name	T. Baker	Monitors	
(print)		Signature	

HEALTH PHYSICS MONITORING FORM					
RPS	FOR BORE	FOR BOREHOLES / TRIAL PITS			
DATE	13/08/08	BOREH REFER	IOLE / TRIAL PIT RENCE NUMBER	TP8	F-010
INSTRUMENT TYPE	INSTRUMENT MODEL	SERIEL NUMBER	CALIBRATION DATE	BACKO REA	Ground Dings
Dose Rate Meter	GR-130	9765	Due 27 th May 2009	65 – 94 cps	
Bose Rate Meter					μSv/hr
			Due do th have cooo	a (cps)	β (cps)
Ratemeter + Probe	Electra	288	Due 10 June 2009	0	
Ratemeter + Probe	DP6	2765	Due 10 th June 2009		5 – 8

	Dose Rate	Contamination		
Surface Monitoring	(μSv/hr)	α (cps)	β (cps)	gamma (cps)
Surface Monitoring		0	5 - 8	68 - 93
		•	00	00 00

Material Surveyed	Depth Dose Rate		Contamination			
(Made Ground, Clay etc)	(mbGL)	(μSv/hr)	α (cps)	β (cps)	gamma (cps)	
Brick rubble	0.5		0	5 – 8	71 – 95	
Clay	1.0		0	5 – 8	69 – 92	
Clay	1.5		0	5 – 8	72 – 108	
Clay	3.5		0	5 – 8	76 – 124	

Ancillary Equipment (drill rig, tools etc)	Dose Rate	Contamination		
	(μSv/hr)	a (cps)	β (cps)	

Monitors Name	T. Baker	Monitors	
(print)		Signature	

HEALTH PHYSICS MONITORING FORM					
RPS	FOR BORE	FOR BOREHOLES / TRIAL PITS			
DATE	13/08/08	BOREH REFER	IOLE / TRIAL PIT RENCE NUMBER	TP8	F-011
INSTRUMENT TYPE	INSTRUMENT MODEL	SERIEL NUMBER	CALIBRATION DATE	BACKO REA	Ground Dings
Dose Rate Meter	GR-130	9765	Due 27 th May 2009	68 – 85 cps	
Bose Rate Meter					μSv/hr
			Due do th have cooo	a (cps)	β (cps)
Ratemeter + Probe	Electra	288	Due 10 June 2009	0	
Katemeter + Probe	DP6	2765	Due 10 th June 2009		6 – 8

	Dose Rate	Contamination		
Surface Monitoring	(μSv/hr)	α (cps)	β (cps)	gamma (cps)
Surface Monitoring		0	6 - 8	65 - 83
		•	•••	00 00

Material Surveyed	Depth Dose Rate		Contamination			
(Made Ground, Clay etc)	(mbGL)	(μSv/hr)	α (cps)	β (cps)	gamma (cps)	
Soil and Clay	0.3		0	6 – 8	67 – 85	
Clay	1.0		0	7 – 9	71 – 102	
Clay	2.6		0	7 – 9	82 – 126	
Clay	3.3		0	7 – 9	80 – 121	

Ancillary Equipment (drill rig, tools etc)	Dose Rate	Contamination		
	(μSv/hr)	a (cps)	β (cps)	

Monitors Name	T. Baker	Monitors	
(print)		Signature	

No. of Concession, Name	HEALTH PHYSICS MONITORING FORM					
RPS	FOR BORE	FOR BOREHOLES / TRIAL PITS				
DATE	13/08/08	BOREH REFER	IOLE / TRIAL PIT RENCE NUMBER	TP8	F-012	
INSTRUMENT TYPE	INSTRUMENT MODEL	SERIEL NUMBER	CALIBRATION DATE	BACKO REA	Ground Dings	
Dose Rate Meter	GR-130	9765	Due 27 th May 2009	68 – 88 cp		
Dose Rate Meter					μSv/hr	
			Due do th true cooo	a (cps)	β (cps)	
Ratemeter + Probe	Electra	288	Due 10 June 2009	0		
Ratemeter + Probe	DP6	2765	Due 10 th June 2009		6 – 8	

Surface Monitoring	Dose Rate		ontamination	
	(μSv/hr)	α (cps)	β (cps)	gamma (cps)
		0	6 – 8	69 - 87
		v	00	00 01

Material Surveyed	Depth	Dose Rate	Contamination		
(Made Ground, Clay etc)	(mbGL)	(µSV/nr)	α (cps)	β (cps)	gamma (cps)
Clay	0.5		0	6 – 8	65 – 86
Clay	2.5		0	6 – 8	74 – 101

Ancillary Equipment (drill rig, tools etc)	Dose Rate	Contamination		
	(μ Sv/hr)	a (cps)	β (cps)	

Monitors Name	T. Baker	Monitors	
(print)		Signature	

HEALTH PHYSICS MONITORING FORM					
RPS	FOR BORE	FOR BOREHOLES / TRIAL PITS			
DATE	14/08/08	BOREH REFER	IOLE / TRIAL PIT RENCE NUMBER	TP8	F-013
INSTRUMENT TYPE	INSTRUMENT MODEL	SERIEL NUMBER	CALIBRATION DATE	BACKGROUND READINGS	
Dose Rate Meter	GR-130	9765	Due 27 th May 2009	68 – 99 c	
Bose Rate Meter					μSv/hr
	Flaster	000	Due do th lune 0000	a (cps)	β (cps)
Ratemeter + Probe	Electra	288	Due 10 June 2009	0	
	DP6	2765	Due 10 th June 2009		6 – 8

Surface Monitoring	Dose Rate	Dose Rate Contamin		ion
	(μSv/hr)	α (cps)	β (cps)	gamma (cps)
		0	6 – 8	70 – 98
		•	•••	10 00

Material Surveyed	Depth Dose Rate		Contamination		
(Made Ground, Clay etc)	(mbGL)	(μSv/hr)	α (cps)	β (cps)	gamma (cps)
Brick and Clay	0.5		0	6 – 8	74 – 106
Clay	1.1		0	6 – 8	68 – 95
Clay	2.5		0	7 – 9	86 – 130

Ancillary Equipment (drill rig, tools etc)	Dose Rate	Contamination		
	(μSv/hr)	a (cps)	β (cps)	

Monitors Name	T. Baker	Monitors	
(print)		Signature	

HEALTH PHYSICS MONITORING FORM					
RPS	FOR BORE	FOR BOREHOLES / TRIAL PITS			
DATE	15/08/08	BOREH REFER	IOLE / TRIAL PIT RENCE NUMBER	TP8	F-014
INSTRUMENT TYPE	INSTRUMENT MODEL	SERIEL NUMBER	CALIBRATION DATE	BACKGROUND READINGS	
Dose Rate Meter	GR-130	9765	Due 27 th May 2009	69 – 91 cp	
Bose Rate Meter					μSv/hr
			Due do th have cooo	a (cps)	β (cps)
Ratemeter + Probe	Electra	288	Due 10 June 2009	0	
	DP6	2765	Due 10 th June 2009		6 – 8

Surface Monitoring	Dose Rate	Co	Contamination	
	(μSv/hr)	α (cps)	β (cps)	gamma (cps)
		0	6 - 8	69 - 91
		•	00	00 01

Material Surveyed	Depth Dose Rate	Contamination			
(Made Ground, Clay etc)	(mbGL)	(μSv/hr)	α (cps)	β (cps)	gamma (cps)
Soil	0.2		0	6 – 8	67 – 85
Clay	0.8		0	6 – 8	73 – 95
Clay	1.2		0	6 – 9	84 – 112
Clay	2.6		0	6 – 9	89 – 120

Ancillary Equipment (drill rig, tools etc)	Dose Rate (μSv/hr)	Contamination	
		a (cps)	β (cps)
Monitors Name	T. Baker	Monitors	
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(print)		Signature	

No. of Concession of Concession, Name	HEALTH PHYSICS MONITORING FORM				
RPS	FOR BORE	FOR BOREHOLES / TRIAL PITS			
DATE	20/08/08	BOREH REFER	IOLE / TRIAL PIT RENCE NUMBER	TP8	F-015
INSTRUMENT TYPE	INSTRUMENT MODEL	SERIEL NUMBER	CALIBRATION DATE	BACKO REA	Ground Dings
Dose Rate Meter	GR-130	9765	Due 27 th May 2009	62 – 85 cp	
Dose Rate Meter					μSv/hr
			Due do th lune 2000	a (cps)	β (cps)
Ratemeter + Probe	Electra	288	Due 10 June 2009	0	
Ratemeter + Probe	DP6	2765	Due 10 th June 2009		6 – 8

	Dose Rate	Contamination		
Surface Monitoring	(μSv/hr)	α (cps)	β (cps)	gamma (cps)
Surface Monitoring		0	6 - 8	64 - 87
		v	00	04 07

Material Surveyed	Depth Dose Rate (mbGL) (µSv/hr)	Co	ontaminati	on	
(Made Ground, Clay etc)	(mbGL)	(μSv/hr)	α (cps)	β (cps)	gamma (cps)
Spoil	0.9		0	6 – 8	66 – 93
Spoil	2.2		0	7 – 9	75 – 112

Ancillary Equipment (drill rig, tools etc)	Dose Rate	Contamination		
	(μSv/hr)	a (cps)	β (cps)	

See over

Monitors Name	T. Baker	Monitors	
(print)		Signature	

No. of Concession	HEALTH PHYSICS MONITORING FORM				
RPS	FOR BORE	FOR BOREHOLES / TRIAL PITS			
DATE	12/08/08	BOREH REFER	IOLE / TRIAL PIT RENCE NUMBER	TP8	F-016
INSTRUMENT TYPE	INSTRUMENT MODEL	SERIEL NUMBER	CALIBRATION DATE	BACKO REA	GROUND DINGS
Dose Rate Meter	GR-130	9765	Due 27 th May 2009	68 – 91 cp	
Bose Rate Meter					μSv/hr
		000	Due do th lune 0000	a (cps)	β (cps)
Ratemeter + Probe	Electra	288	Due 10 June 2009	0	
Ratemeter + Probe	DP6	2765	Due 10 th June 2009		5 – 7

Surface Monitoring	Dose Rate	Contamination		
	(μSv/hr)	α (cps)	β (cps)	gamma (cps)
		0	5 – 7	66 - 90
		•	•	

Material Surveyed	Depth	Depth Dose Rate mbGL) (μSv/hr)	Co	ontaminati	on
(Made Ground, Clay etc)	(mbGL)		α (cps)	β (cps)	gamma (cps)
Clay	1.2		0	5 – 7	70 – 86

Ancillary Equipment (drill rig, tools etc)	Dose Rate	Contamination		
	(μ Sv/hr)	a (cps)	β (cps)	

See over

Monitors Name	T. Baker	Monitors	
(print)		Signature	

HEALTH PHYSICS MONITORING FORM					
RPS	FOR BORE	FOR BOREHOLES / TRIAL PITS			
DATE	15/08/08	BOREH REFER	IOLE / TRIAL PIT RENCE NUMBER	TP8	F-017
INSTRUMENT TYPE	INSTRUMENT MODEL	T SERIEL CALIBRATION BACK NUMBER DATE REA			Ground Dings
Dose Rate Meter	GR-130	9765	Due 27 th May 2009	93 – 116 cp	
Dose Rate Meter					μSv/hr
			Due do th have cooo	a (cps)	β (cps)
Ratemeter + Probe	Electra	288	Due 10 June 2009	0	
Ratemeter + Probe	DP6	2765	Due 10 th June 2009		7 – 9

	Dose Rate	Contamination		
Surface Monitoring	(μSv/hr)	α (cps)	β (cps)	gamma (cps)
Surface Monitoring		0	7 – 9	91 – 106
		•		01 100

Material Surveyed	Depth Dose Rate		Co	ontaminati	on
(Made Ground, Clay etc)	(mbGL)	(μSv/hr)	α (cps)	β (cps)	gamma (cps)
Clay	0.4		0	7 – 9	99 – 128
Clay	0.9		0	7 – 9	95 – 131
Clay	2.5		0	7 – 9	96 – 133
Clay	3.0		0	7 – 9	98 – 146

Ancillary Equipment (drill rig, tools etc)	Dose Rate	Contamination		
	(μSv/hr)	a (cps)	β (cps)	

See over

Monitors Name	T. Baker	Monitors	
(print)		Signature	

HEALTH PHYSICS MONITORING FORM					
RPS	FOR BOREHOLES / TRIAL PITS				
DATE	18/08/08	BOREH REFER	IOLE / TRIAL PIT RENCE NUMBER	TP8	S-001
INSTRUMENT TYPE	INSTRUMENT MODEL	SERIEL NUMBER	CALIBRATION DATE	BACKO REA	Ground Dings
Dose Rate Meter	GR-130	9765	Due 27 th May 2009	86	– 119 cps
Dose Nate Meter					μSv/hr
			Day doth tags 0000	a (cps)	β (cps)
Ratemeter + Probe	Electra	288	Due 10 June 2009	0	
	DP6	2765	Due 10 th June 2009		8 – 10

	Dose Rate	Contamination		
Surface Monitoring	(μSv/hr)	α (cps)	β (cps)	gamma (cps)
Surface Monitoring		0	8 – 10	88 – 121
		_		

Material Surveyed	Depth Dose Rate		Co	ontaminati	on
(Made Ground, Clay etc)	(mbGL)	(μSv/hr)	α (cps)	β (cps)	gamma (cps)
Clay	0.9		0	8 – 10	91 – 125
Clay	1.1		0	8 – 10	92 – 131
Clay	1.85		0	8 – 10	98 – 127
Clay	3.0		0	8 – 10	103 – 131

Ancillary Equipment (drill rig, tools etc)	Dose Rate	Contamination		
	(μSv/hr)	a (cps)	β (cps)	

See over

DATE	BOREHOLE / TRIAL PIT	
	REFERENCE NUMBER	

Monitors Name	T. Baker	Monitors	
(print)		Signature	

HEALTH PHYSICS MONITORING FORM					
RPS	FOR BOREHOLES / TRIAL PITS				
DATE	18/08/08	BOREH REFER	IOLE / TRIAL PIT RENCE NUMBER	TP8	S-002
INSTRUMENT TYPE	INSTRUMENT MODEL	SERIEL NUMBER	CALIBRATION DATE	BACKO REA	Ground Dings
Dose Rate Meter	GR-130	9765	Due 27 th May 2009	92	– 106 cps
Bose Rate Meter					μSv/hr
	Fleetre	200	Due 40 th June 2000	a (cps)	β (cps)
Ratemeter + Probe	Electra	288	Due 10 June 2009	0	
	DP6	2765	Due 10 th June 2009		8 – 10

	Dose Rate	Contamination		
Surface Monitoring	(μSv/hr)	α (cps)	β (cps)	gamma (cps)
Surface Monitoring		0	8 – 10	90 – 105

Material Surveyed	Depth	Dose Rate	Co	on		
(Made Ground, Clay etc)	(mbGL)	(μSv/hr)	α (cps)	β (cps)	gamma (cps)	
Clay	0.0 - 0.9		0	8 – 10	89 – 114	
Clay	1.0		0	8 – 10	88 – 110	
Clay	3.0		0	8 – 10	94 – 126	

Ancillary Equipment (drill rig. tools etc)	Dose Rate	Contam	nination
Anomaly Equipment (and hig, tools etc)	(μSv/hr)	a (cps)	β (cps)

See over

Monitors Name	T. Baker	Monitors	
(print)		Signature	

No. of Concession of Concession	HEALTH PHYS	ICS MONI	TORING FORM				
RPS	FOR BORE						
DATE	18/08/08	BOREH REFER	TP8S-003				
INSTRUMENT TYPE	INSTRUMENT MODEL	ENT SERIEL CALIBRATION BACKGROU NUMBER DATE READING					
Dose Rate Meter	GR-130	9765	Due 27 th May 2009	95 – 118 cps			
Dose Rate Meter					μSv/hr		
			Day doth tags 0000	a (cps)	β (cps)		
Ratemeter + Probe	Electra	288	Due 10 June 2009	0			
	DP6	2765	Due 10 th June 2009		7 – 9		

	Dose Rate	Co	ontaminati	on
Surface Monitoring	(μSv/hr)	α (cps)	Contamination s) β (cps) gamma (cps) 7 – 9 93 – 115	
Surface Monitoring		α (cps) 0	7 - 9	93 - 115
		•		50 110

Material Surveyed	Depth	Dose Rate	Contamination					
(Made Ground, Clay etc)	(mbGL)	(μSv/hr)	α (cps)	β (cps)	gamma (cps)			
Clay	0.8		0	7 – 9	97 – 123			
Clay	1.4		0	7 – 9	95 – 128			
Clay	2.2		0	7 – 9	98 – 131			
Clay	3.0		0	7 – 9	93 – 136			

Ancillary Equipment (drill rig. tools etc)	Dose Rate	Contamination			
	(μ Sv/hr)	a (cps)	β (cps)		

See over

ПАТЕ	BOREHOLE / TRIAL PIT	
DAIL	REFERENCE NUMBER	

Monitors Name	T. Baker	Monitors	
(print)		Signature	

Appendix B

Exploratory Hole Logs

R	PS					В	OR	E⊦	IOL	.E	LOC	3		Boreho BH8I Sheet	ole No. 001 1 of 1	
Project Name:	Mensa Rem	ediatior	n Works	Coordir	nates		Drilling M	ethod:	Cable Per	cussive				Hole	Type	
Project No.	JER3996/88	S8F		Northing	gs: 4682	33.30	Start Date	e: 27	/08/2008		Hole D	Details		Ca	ble	
Location: AWE	Burghfield			Easting	s: 1679	16.35	End Date	: 27	/08/2008	Hol	e Diameter (mm)	Casing (n	Depth n)	Sc	ale	
Client: AWE	plc			Ground	Level: 43	3.510 n	n OD Log	ged By:	CJW					1:	50	
Well Water	Sample	s & In	Situ Testi	ng	Level	Depth (m)	Legend				Descrip	tion Of S	Strata			
Well Water Strikes	Sample Depth (m) 0.00-0.50 0.00 0.50-1.00 1.00 1.00-1.50 1.00-1.50 2.00-2.50	E B B B B B B B B B B B B B B B B B B B	Situ Testi Results VOC = 2:	ng s	Level (m AOD) 42.51	Depth (m) 1.00		Soft, bri frequen cobbles of flint. Soft to f sandy C subrour Becc	own, mottl t brick anc. . Gravel is (MADE G irm, brown CLAY. Gra ided of flin pomingstiffe	ed orang I wood fr fine to o ROUNE a, mottle vel is find t and ch er and les	Descrip ye, sandy, (agments al coarse, ang)) d orange al e to coarse alk. (WEA ss sandy with tled orange	tion Of S gravelly C and occasic jular to su and grey, g , angular THERED ith depth.	Strata LAY with onal conc brounded gravelly, to LONDOI	rete 1 N CLAY)	- 43. - 42. - 42. - 41. - 41. - 40. - 40. - 39. - 39. - 39. - 39. - 39. - 38. - 38.	.01 .51 .01 .51 .01 .51 .01 .51 .01
					37.51	6.00				End (t 6.00 m			37.	.51
															- 36.	.51
															- 36.	.01
															- 35.	.51
															- - 35. -	(10. dated 26th
															- 34. -	.51 .51
															- 34.	CO1 (BIN 414 8) Star
Remarke								Chise	llina Deta	uls		Gr	oundwa	ter Notes		HoleRo
Nonarts.							-	Time Taken	Depth From (m)	Depth To (m)	Tool Used	Strike (m)	Casing Depth (m)	Level After 20 Mins (m)		
							-		. ,						AG	S

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BOREHOLE LOG

Borehole No. BH8F-002

	LP2													Sheet	: 1 of 1
Project Name	e: Mensa Rer	emediatior	Works	Coordir	nates		Drilling N	lethod: (Cable Pero	cussive				Hole	Туре
Project No.	JER3996/8	8S8F		Northing	gs: 4681	01.35	Start Dat	e: 12	/08/2008		Hole D	Details		Ca	ble
Location: AW	/E Burghfield			Eastings: 167840.91			End Date	nd Date: 12/08/2008 Hole Diameter Casing Depth (mm) (m)				Sc	ale		
Client: AW	/E plc			Ground	Level: 44	l.580 r	m OD Lo	gged By:	BC					1:	50
Well Water Strikes	Depth (m)	les & In Type	Situ Testi Results	ng	Level (m AOD)	Depth (m)	Legend			•	Descrip	tion Of Str	rata		
Location: AW Client: AW Well Water Strikes	/E Burghfield /E plc Depth (m) 0.00 0.60 0.60 0.60 1.20 1.50	Ies & In Type W PID1 E X E E	Situ Testii Results VOC = 13.	Easting: Ground ng	s: 1678 Level: 44 44.28 43.93 43.58 43.08 43.08	40.91 1.580 r Depth (m) 0.30 0.65 1.00 1.50 5.50 6.00	End Date n OD Lo Legend Lo	soft, brc frequent GROUN Soft, brc GROUN Soft, brc Gravel is chalk ar (MADE + Firm, bri CLAY: C of flint a GROUN Stiff, brc subang LONDO Clay	(08/2000 (08/2000 (08/2000 BC BC (08/2008 BC (08/2008 BC (08/2008 GROUND (08/2008 (08/208 (08/208 (08/208	ed orang Brick and ed orang oarse, su equent w) ed orang oarse, su equent w) ed orang coccasion ed orang LAY. Gra rounded g stiffer an g stiffer an g stiffer an g stiffer an g stiffer an g stiffer an g stiffer an g stiffer an g stiffer a	Diameter (mm) Descrip Je, slightly s d wood frag- Je, very sar ubangular to ood and br Je, sandy, v ubangular to ood and br Je, sandy, v ubangular to ood and prey arse, subar hal brick fra 	Casing D (m) tion Of Str sandy CLAN gments. (N ndy, gravelly o subround rick fragmer very gravelly o subround rick fragmer y, sandy, gra- gular to sul agments (N , slightly sai to medium, d chalk. (W h depth. ON CLAY) =	rata Y with ADE Y with ADE Y CLAY. ed of nts. Y CLAY. ed of nts. Y CLAY. ADE Indy, /EATHER	Sc 1:	ale 50
															- 37.08
															- - 36.58 -
															- - 36.08 -
															- - - 35.58
															- - - 35.08
															-
															-
Remarks:								Chisel Time Taken	ling Deta Depth From (m)	tils Depth To (m)	Tool Used	Grou	undwate Casing I Depth (m) 2	r Notes evel After 0 Mins (m)	AGS

R	PS					В	OR	EF	IOL	E	LOC	G		Boreh BH8 Shee	ole No. F-003 t 1 of 2
Project Name Project No.	: Mensa Rer JER3996/8	nediatior S8F) Works	Coordi Northin	nates gs: 468 ⁻	179.26	Drilling M Start Date	ethod: e: 12	Cable Per 2/08/2008	cussive Hol	Hole [e Diameter	Details Casing	Depth	Hole Ca	Type able
Client: AW	E plc			Ground	Level: 4	4.080 r	End Date	: 1: gged By:	3/08/2008 BC/CJW	,	(mm)	(n	n)	1	:50
Well Water	Sample	es & In	Situ Testi	ng		Depth	Legend				Descrin	tion Of S	Strata		
	0.00		1/22	70	43.78 43.58	0.30 0.50		Soft bro rootlets subrou Soft to CLAY. of chall	own, sand Gravel is nded of ch firm, brow Gravel is f	y, very gr fine to c alk and f n, orange ine to co Occasio	ravelly CLA coarse, sub lint. (TOP e, sandy, sl arse, subar nal brick ar	Y with fre angular to SOIL) ightly grav ngular to s nd wood fi	equent velly subround ragments	led	43.58
	1.00	E	VOC = 0.	70	42.58	1.50		Soft to CLAY. of chall (MADE Firm br	firm, brow Gravel is f and flint. GROUNE	n, mottle ine to co Frequen)) led orang	d orange, v arse, subar t brick and ge and grey	very sandy ngular to s wood frag	y, gravelly subround gments.	y led	-42.58
	2.00	E						subrou	nded of ch	alk and f	int. (WEA	ATHERED	LONDO	N CLAY)	- 42.08 - - - 41.58 -
	3.00	E			40.33	3.75		Stiff to	von stiff (tlod orange	and brou			= 41.08 - 40.58
								(LONI	Very Stiff, (DON CLA)	grey, moi r)	tied orange	and brov	WN CLAY		- 40.08
								-							- 39.08 - 38.58
															- - 38.08 - - - - - - - - - - - - - - - - - - -
															- 37.08
															- - - - - - - - - - - - - - - - - - -
					34.58	9.50		Soft to	firm, grey,	black, sa	andy, slight	ly gravelly	y CLAY.		- 35.58
								Gravel	IS IN ETO C	oarse, a	ngular to sl	NOUDDEC	a of tiint,		-
Remarks								Chise	Iling Deta	_{Cc}	ontinued next	sheet Gr	roundwa	ater Notes	<u>F</u>
Nemarks:							-	Time Taken	Depth From (m)	Depth To (m)	Tool Used	Strike (m)	Casing Depth (m)	Level After 20 Mins (m)	
															AGS

RPS		BC	DRE	HOLI	E LOC	3	Boreho BH8F Sheet	ole No. 003 2 of 2
Project Name: Mensa Remediation	Works Coordinates	Drill	lling Method	: Cable Percu	ssive		Hole	Туре
Project No. JER3996/8S8F	Northings: 46817	9.26 Star	art Date:	12/08/2008	Hole [Details	Cal	ble
Location: AWE Burghfield	Eastings: 16783	7.70 End	d Date:	13/08/2008	Hole Diameter (mm)	Casing Depth (m)	Sca	ale
Client: AWE plc	Ground Level: 44.0	080 m OE	D Logged E	By: BC/CJW			1:	50
Well Water Samples & In Strikes Depth (m) Type	Situ Testing Level I Results (m AOD)	Depth (m) Le	egend		Descrip	tion Of Strata		
		1	chall	k and mudstone	. (READING BE	EDS)		-
								- - - 33.58 -
								-
								- - - 32.58 -
								-
								- - 31.58 -
								= 31.08 - -
	30.58	13.50	Soft,	grey, sandy gra	avelly CLAY with	frequent shell		- 30.58
			subr	ounded of flint,	chalk and mudsto	one. (READING	BEDS)	-
								- - 29.58 -
								- - 29.08 - -
								- - 28.58 -
	28.08	16.00	Soft (REA	brown sandy Cl ADING BEDS)	LAY with lenses of	of strong mudston	e.	28.08
								- 27.58 - - -
								- 27.08 - -
								-
	26.08	18.00			End of Borehole at	18.00 m		26.08
								- - 25.58 - -
								- 25.08
								- - 24.58 -
						2		
Remarks:			Chi Time	Depth	Cepth Tool Used	Groundw	Level After	:
			lake	11 FIOM (M)	i u (m)		y ∠u wins (m)	
								AGS

R	PS					В	OR	EF	IOL	E.	LOC	3	E	Borehol BH8S- Sheet 1	e No. ∙ 001 I of 2
Project Name Project No.	: Mensa Rer JER3996/8	nediation S8F	Works	Coordi Northin	nates gs: 4680)83.12	Drilling M Start Date	ethod: e: 18	Cable Per 3/08/2008		Hole [Details		Hole T Cab	ype le
Client: AW	E plc			Easting Ground	ls: 1682 Level: 44	209.40 4.350 r	End Date	: 18 gged By:	8/08/2008 CJW		(mm)	(m)		Scal 1:5	e 0
Well Water Strikes	Depth (m)	es & In Type	Situ Testi Results	ng	Level (m AOD)	Depth (m)	Legend				Descrip	tion Of Strata	a		
Weil Strikes	Depth (m) 0.00-1.00 0.00 1.00-1.50 1.00-1.50 1.00-1.50 1.00-1.50 1.50 3.00-3.50	Type E W D X E PID1	VOC = 4.	90	43.85 42.35 40.35	0.50 2.00 4.00		Firm, d brick fr flint. (I Soft to slightly subang (WEAT Clay Firm to shell fra Brow	ark brown, agments. (MADE GR firm, light b sandy, gra ular to sub rown, grey gravelly C ular of ora HERED LC / becomes stiff, grey, agments.	grey, sa Gravel is OUND) prown mavelly CL prounded , mottled LAY. Grange, gre DNDON dark bro dark bro	Descrip Indy, gravel if fine to mer ottled orang AY. Gravel d of flint. (N d orange, sl avel is fine y and brow CLAY) own with de brown CLAY) ears by 5.00	tion Of Strata	a requent ded of Jm, D)		43.85 43.35 42.85 42.85 42.35 41.85 41.35 40.85 40.35 39.85 39.85 39.35 38.85 38.85 38.35 38.35 37.85
Remarks:					35.85	8.50		Firm, g CLAY) Chise	rey, CLAY	with occ	asional sar	ndy bands. (LC sheet Grounc	ONDON dwater N	Notes	36.85 - 36.35 - 35.35 - 34.85
							-	Time Taken	Depth From (m)	Depth To (m)	Tool Used	Strike (m) Casi Depth	ing Lev 1 (m) 20 M	rel After Mins (m)	AGS

RPS	В	OR	EHOL	e loc	3	Borehole BH8S- Sheet 2	e No. • 001 2 of 2
Project Name: Mensa Remediation Works	Coordinates	Drilling Me	ethod: Cable Percu	issive		Hole T	уре
Project No. JER3996/8S8F	Northings: 468083.12	Start Date	: 18/08/2008	Hole D	Details	Cabl	е
Location: AWE Burghfield	Eastings: 168209.40	End Date:	18/08/2008	Hole Diameter (mm)	Casing Depth (m)	Scal	е
Client: AWE plc	Ground Level: 44.350	m OD Log	ged By: CJW			1:50	0
Use of the second seco	Eastings: 1682/09.40 Ground Level: 44.350 ng Level Depth 34.35 10.00 34.35 10.00 28.35 16.00 26.35 18.00	End Date: m OD Log Image: Im	18/08/2008 ged By: CJW Soft, locally firm, gr Thin band of gre fragements from Soft brown sandy C (READING BEDS)	(mm) Descrip ey, CLAY. (REAL een, grey sandy SI 10.2 - 10.3mbGL	(m) · tion Of Strata DING BEDS) LT with shell	e.	e) - 33.85 - 33.35 - 32.85 - 32.35 - 32.35 - 31.35 - 30.35 - 30.35 - 29.85 - 29.85 - 29.35 - 29.85 - 29.35 - 29.85 - 29.35 - 29.85 - 29.35 - 29.35 - 28.85 - 27.35 - 27.35 - 26.85 - 27.35 - 26.85 - 25.35 - 25.35 - 25.35
Remarks:		-	Chiselling Detail Time Depth Taken From (m)	S Depth Tool Used To (m)	Groundw Strike (m) Casing Depth (n	Ater Notes Level After 20 Mins (m)	
							AGS

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BOREHOLE LOG

Borehole No. BH8S-002

	R	.22													Sheet	t 1 of 1	
Project	Name	: Mensa Ren	nediatio	n Works	Coordir	nates		Drilling I	/lethod:	Cable Per	cussive				Hole	Туре	
Project	t No.	JER3996/8	S8F		Northing	gs: 4680	86.23	Start Da	te: 1	8/08/2008		Hole D	Details		Ca	ble	
Locatic	on: AW	E Burghfield			Easting	s: 1682	208.60	End Dat	e: 1	8/08/2008	Hol	e Diameter (mm)	Casing (n	Depth n)	Sc	ale	
Client:	AW	E plc			Ground	Level: 44	4.290 n	n OD Lo	gged By:	BC					1:	50	
Well	Water Strikes	Sample Depth (m)	es & In Type	Situ Testi Results	ng	Level (m AOD)	Depth (m)	Legend	1			Descrip	tion Of S	Strata			
		0.00	W						Soft to with fre	firm, brown	n, mottle k fragme	d orange, s nts. Gravel	andy, gra is fine to	velly CLA coarse,	 Υ	-	
						43.89	0.40	****	subang	ular to sub	prounded	d of flint. (N	ADE GR	OUND		-43.79	
		0.80	F						is fine	ange brow to coarse a	n mottle angular t	d grey sand o subround	ly gravelly led of flint	/ CLAY. (and	Gravel	-	
		0.00	-						Chalk.	(MADE G	ROUND)				- - 43.29	
									Š.							-	
		1.50	PID1	VOC = 6.9	90	42.79	1.50	<u> </u>	Errm to	stiff brow	n mottle	d orange v	erv sand	/ gravelly	v	42.79	
		1.50 1.50 1.50	XE						CLAY	Gravel is t	fine to co udtsone	asrse, ang (WFATH	ular to su	brounded	d of CLAY)	-	
	2.30 E 41.99 2.30									ev. mottled	orange	and brown	sliahtlv s	andv CI 4	AY.		
									LON	IDON CLA	Y)			, 00		- 41.79	
									-							-	
									-							- 41.29 -	
								E	-							- 10 70	
									-								
									-							- 40.29	
									-							-	
									-							- - 39.79	
									-							-	
									-							- 39.29	
									-							-	
									-							- 38.79	
									-							-	
									-							- 38.29	
						27 70	6 50		-								
						57.79	0.50				End	of Borehole at	6.50 m			37.79	
																- 37.29	
																- 36.79	
																-	
																- 36.29	
																- - -	
																- 35.79	
																-	
																- 35.29 -	
																- 34.79	
																-	
Rem	arke [.]								Chise	elling Deta	ails		Gr	oundwa	ter Notes		
	ai 113.								Time Taken	Depth From (m)	Depth To (m)	Tool Used	Strike (m)	Casing Depth (m)	Level After 20 Mins (m)		
														. ,			
																AUN	

F	RF	PS				Т	RIAL PIT LOG		Trial Pit No. TP8F-001 Sheet 1 of 1
Project Na	ime:	Mensa	a Remediation	Works	;	60.0	rdo. N - 167916.34	Ground Level	D :
Project No).	JER39	996/8S8F			0-0	E - 468202.79	43.860mOD	Date: 14/08/2008
Location:		AWE	Burghfield			Weat	her: Cloudy		Scale 1:25
Client:	nles & I	AWE	plc esting	Denth	Laval	Equip	oment: JCB 3CX		Logged by: BC
Depth (m)	Туре	Ref	Results	(m)	(m AOD)	Legend	Stratum	Description	
0.30 0.75 0.75 0.75 0.75	E PID1 D X E	1 1 1 2	VOCs =1.00ppm	0.10	43.76		Lurf over soft brown sandy CLAY with frequent rool Soft to firm, brown mottled orange, sandy, gravelly to coarse, subangular to subrounded of flint, chalk a (MADE GROUND)	Itets. (TOPSOIL) CLAY. Gravel is fine and mudstone.	
1.10	E	3		1.10	42.76		Firm to stiff, brown mottled orange and grey, sandy is fine to coarse, subangular to subrounded of flint, mudstone. (WEATHERED LONDON CLAY)	, gravelly CLAY. Gravel chalk and	-1
							Clay becomes stiffer with depth.		-2 - - - - - - - - - 3
				3.10	40.76		Trial Pit Complet	e at 3.10 m	
Stability:		Good							
Groundwa	ater:	None	encountered						
Remarks:									AGS

HoleBASE III (Bid 414.8) Standard Trialpit Log v1 dated 26th Mar 03

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TRIAL PIT LOG

Trial Pit No. **TP8F-002**

		2				••	\ 17				Sh	eet 1 of 1	1
Project Na	me:	Mens	a Remediatior	ו Works	;	Co-ord	. N -	167930.35	Ground Level	Data	15/00	2/2000	
Project No	-	JER3	996/8S8F			00-010	ъ. Е-	468215.09	43.860mOD	Date:	15/08	3/2008	
Location:		AWE	Burghfield			Weath	er:	Cloudy, Light Rain		Scale		1:25	
Client:		AWE	plc			Equipn	nent:	JCB 3CX		Logged	by:	BC	
Samp	oles & I	n Situ 1	resting	Depth	Level			.					-
Client: Depth (m) 0.30 0.60 0.60 0.60 0.90	E PID1 D X E E	AWE n Situ 1 Ref	plc Testing Results VOCs =3.70ppm	Depth (m) 0.30 0.60 0.90	Level (m AOD) 43.56 43.26 42.96 42.96		Turf ov rootlets and flin Soft to fine to GROU Soft, bt to coa	JCB 3CX Stratum rer, soft brown, sandy, slightly gravelly CLA s. Gravel is fine to medium, subangular to s it. (TOPSOIL) firm, brown, mottled orange, very sandy, yery gravities rown, mottled orange, very sandy, very gravities or stiff, brown, mottled orange and grey, sand Gravel is fine to coarse, subangular to sub udstone. (WEATHERED LONDON CLAY) lay becomes stiffer with depth. Trial Pit Comple	Description Y with frequent ubrounded of chalk avelly CLAY. Gravel is chalk. (MADE relly CLAY. Gravel is fine k. (MADE GROUND) ty, slightly gravelly rounded of flint, chalk tete at 3.00 m	Logged	by:	BC	
Stability: Groundwa	ater:	Stable	encountered										-
Remarks:		Black	and yellow la	bel mar	ked ELE(CTRICIT	Y enco	ountered at 0.2mbGL - Trial pit r	noved 1.0m to the s	outh.		A	GS

TRIAL PIT LOG

Trial Pit No. **TP8F-003**

Sheet 1 of 1

Project Na	me:	Mensa	a Remediation	Works		Co-or	ds: N - 167908.31	Ground Level	Date: 14/08/20	08	
	-		996/858F			Weet	E - 408210.55	43.980mOD	0	F	
Client:						Fault	mont: ICB 3CX		Scale 1:2	5 -	
Sam	oles & I	n Situ 1	Festing	Depth	Level	Equip			Logged by: BC	ر ا	
Depth (m)	Туре	Ref	Results	(m)	(m AOD)	Legend	Stratum I	Description			
0.30 0.60 0.60 0.60	E PID1 D X	1 1 1 1	VOCs =1.90ppm	0.30 0.60	43.68 43.38		Turf over, loose, brown, sandy, gravelly CLAY with f Gravel is fine to coarse, subangular to subrounded of (TOPSOIL) Metal drain cover (50mm x 40mm) encountere Soft, brown, mottled orange, sandy, gravelly CLAY. coarse, subangular to subrounded of flint and chalk.	requent rootlets. of chalk and flint. d at 0.2mbGL. Gravel is fine to . (MADE GROUND) velly CLAY. Gravel is nalk and mudstone.		- - - - - - - - - - - - - - - - - - -	
1.15	E	3		1.15	42.83		Firm to stiff, brown, mottled orange and grey, sandy, CLAY. Gravel is fine to coarse, subangular to subro and mudstone. (WEATHERED LONDON CLAY)	, slightly gravelly unded of flint, chalk		- 	1
											2
				2.90	41.08		Trial Pit Complete	at 2.90 m		- - - - - - - - - - - - - - - - - - -	3
											4
Stability:		Stable	3							-	Loo v1 dated 26th Mar 03
											d Trialoit
Groundwa Remarks:	ater:	None Metal	encountered drain cover (5	0mm x	40mm) (encounte	ered at 0.2mbGL.			AGS	3ASE III (Bid 414.8) Standar

F	RF	PS				ΤI	RIAL PIT LOG		Trial Pit No. TP8F-004 Sheet 1 of 1	ŀ
Project Na	me:	Mensa	Remediation	n Works	;		. N- 167880.58	Ground Level		
Project No		JER39	996/8S8F			Co-or	E - 468071.70	43.960mOD	Date: 13/08/2008	
Location:		AWE	Burghfield			Weat	her: Rain		Scale 1:25	
Client:		AWE	plc		1	Equip	oment: JCB 3CX		Logged by: DJB	
Samp Depth (m)	ples & I Type	n Situ T Ref	Results	Depth (m)	Level (m AOD)	Legend	Stratum E	Description		
				0.10	43.86		Turf over soft dark brown slightly sandy CLAY. (TO	PSOIL)		
0.10-0.20	E	1					Firm, dark brown to brown CLAY with numerous rool angular gravel of white and grey flint. Rare cobbles of fragments of red brick and concrete boulders. (MAI	llets and rare coarse of flint. Frequent DE GROUND)		-
0.50	X	1					Coarse, subangular to subrounded gravels of fl clay pipe fragements. Possibly old land drain d water.	int and occasional ue to rapid ingress of		-
0.90 0.90-1.00 1.00	E PID1	1 2 1	VOCs =4.30ppm	1.20	42.76		Trial Pit Complete	at 1.20 m		-1
										-22
										- 4 4
										-
Stability:		Unstal	ble in silt and	gravel						
Groundwa	ater:	Rapid	ingress of wa	ater at 0	.7mbGL					
Remarks:		Trial p	it terminated	at 1.2m	bGL due	e to insta	bility and proximity of steam pipe		AG	S

F	RF	PS				Tł	RIAL PIT LOG		Trial Pit No. TP8F-005 Sheet 1 of 1
Project Na	amo.	Mone	- Remediation	Works			107007.40	Ground Loval	
Project No	אוווכ. ה	JER3	996/858F	IVVOING	•	Co-or	ds: N - 167867.12 E - 468059.14		Date: 12/08/2008
Location:		AWF	Burghfield			Weath	per: Cloudy and Windy	44.0301100	Scale 1:25
Client:		AWE				Fauip	ment: JCB 3CX		Logged by: DIB
Sam	ples & I	n Situ 1	Testing	Depth	Level				00 7 202
Depth (m)	Туре	Ref	Results	(m)	(m AOD)	Legend	Stratum D	escription	
0.10 0.10-0.30 0.10-0.30 0.10-0.30	PID1 D E X	1 1 1	VOCs =1.80ppm	0.10	43.93		Firm, dark brown to brown CLAY with numerous rootle angular gravel of white and grey flint. Rare cobbles of of red brick. (MADE GROUND)	ets and rare coarse flint and fragments	
0.90	PID2	2	VOCs =4.60ppm	0.90	43.13				
0.90-1.00	D	2		1.00	43.03		Soft damp, grey, green, Silty CLAY. Possiby old grour GROUND)	nd level. (MADE	1
0.90-1.00		2					Firm, dark brown to brown CLAY with numerous rootle angular gravel of white and grey flint. Rare cobbles of of red brick. (MADE GROUND)	ets and rare coarse flint and fragments	-
1.40	PID3	3	VOCs =6.20ppm	1.40	42.63	XXXXXX	Damp, orange brown, clayey, slightly sandy GRAVEL	. Gravel is fine to	
1.40-1.60 1 40-1 60	DF	3					coasre, subangular to subrounded of white, brown an coarse and angular.	d grey flint. Sand is	-
2.30 2.30-2.60 2.30-2.60	PID4 D E	4 4 4	VOCs =6.90ppm	1.00	42.43		Stiff orange brown, mottled grey CLAY. (WEATHER	ED LONDON CLAY)	-2
3.10 3.10-3.20 3.10-3.20 Stability:	PID5 D E	5 5 5 Unsta	VOCs =2.70ppm able in gravel.	3.30	40.73		Trial Pit Complete	at 3.20 m	-4
Remarks	:								AGS

eBASE III (Bid 414.8) Standard Trialpit Log v1 dated 26th Ma

		_							Trial Dit Na
	۲ŀ	\mathbf{S}					RIAL PIT LUG		Shoot 1 of 1
Broject Na	mo:	Mons	a Romodiation	Works				Cround Loval	Sheet FOFT
Project Na Project No		JER3	996/8S8F	IVVOIKS	•	Co-or	ds: N - 167859.67 E - 468071.28		Date: 12/08/2008
Location:		AWE	Burghfield			Weat	her: Cloudy and Windy		Scale 1:25
Client:		AWE	plc			Equip	ment: JCB 3CX		Logged by: DJB
Samp	oles & I	n Situ	Festing	Depth		Logond	Christian D	agariation	
Deptn (m)	Туре	Rei	Results	(11)	(III AOD)	Legenu	TOPSOIL (TOPSOIL)	escription	
0.10 0 10-0 30	PID1	1	VOCs =12.40ppm	0.10	44.14		Firm, dark brown to brown CLAY with numerous rootle angular gravel of white and grey flint. Rare cobbles of	ets and rare coarse flint and fragments	
0.10-0.30	EX	1					of red brick. (MADE GROUND)	-	-
									-
									-
0.70	PID2	2	VOCs =16.20ppm						-
0.70-0.90 0.70-0.90	DE	2 2							-
									-1
				1.10	43.14	****	Damp, orange, brown, clavey, slightly sandy GRAVEL	Gravel is fine to	
1.20	PID3	3	VOCs =15.00ppm				coarse, subangular to subrounded of white, brown an coarse and angular. (MADE GROUND)	d grey flint. Sand is	-
1.20-1.40 1.20-1.40	E	3		1.40	42.84				
							Stiff brown, mottled orange and grey CLAY. (WEATH CLAY)	HERED LONDON	-
									-
									-
1.90-2.00	D	4							-
1.90-2.00	E PID4	4	VOCs =7.40ppm						-2
							Recoming slightly grover with depth		-
							Decoming anging greyer war deput		-
							Occasional small (5cm) pockets of orange CLAY	at 2.40mbGL.	-
									-
									-
									-
									-3
3.10 3.10-3.20	PID5 D	5 5	VOCs =6.80ppm	3.10	41.14		Stiff, grey, brown and orange CLAY with rare mudstor	ne cobbles.	
3.10-3.20	E	5							-
				3.40	40.84		Trial Pit Complete		
									-
									-
									-
									-4
									-
									-
									-
									-
									ļ
									-
Stability:		Good							
Groundwa	ater:	None	encountered						
Remarks:									AGS

34SF III (Rid 414.8) Standard Trialnit I on v1 dated 26th

TRIAL PIT LOG

Trial Pit No. **TP8F-007**

. . .

						-			Sheet T OI	1
Project Na	Project Name: Mensa Remediation Works						ds: N - 167866.93	Ground Level	Date: 13/08/2009	
Project No	-	JER3	996/8S8F				E - 468087.72	44.730mOD	Date. 13/00/2008	
Location:		AWE	Burghfield			Weath	ner: Rain and Wind.		Scale 1:25	
Client:		AWE	plc			Equip	ment: JCB 3CX		Logged by: DJB	
Samp	oles & I	n Situ 1	Testing	Depth	Level	Langer	o			
Depth (m)	Туре	Ref	Results	(m)	(m AOD)	Legena	Stratum L	Pescription		
0 10-0 20	F	1		0.10	44.63	*****	Firm, dark brown to brown, slightly gravelly CLAY with	h numerous rootlets.		
0.10 0.20	-					*****	Gravel is coarse angular to subrounded of chalk and Rare cobbles of flint. Frequent fragments of red bric	white and grey flint. k and concrete		-
0.00-0.60	D	1				*****	boulders. (MADE GROUND)			-
0.50	v	1								-
0.50-0.60	Ê	2	VOCs =1 90ppm	0.60	44 13	*****				
0.60	PID1	1	rooppin	0.00	1.10		Soft, black, slightly sandy, CLAY with rootlets (old so GROUND)	il horizon) (MADE		-
				0.80	43.93		Soft slightly damp light brown mottled orange slight	ly sandy CLAY		
0.80-1.00	Е	3				****	(MADE GROUND)	ly sandy OLAT.		-
						*****				-1
										-
						*****				-
				1 40	12.22					-
				1.40	43.33	*****	Damp, orange brown, clayey, slightly sandy GRAVE	Gravel is fine to and arev flint. Sand is		
					.0.20		coarse and angular. (MADE GROUND)			
							Firm to stiff brown orange and grey mottled CLAY. LONDON CLAY)	WEATHERED		-
							Localised pockets of stiff, light grey, slightly san	dy, gravelly CLAY.		-
										-
										-2
										-
										-
										-
										-
										-
										-
										-
										-
				3.00	41.73		Stiff, damp, grey mottled brown and orange CLAY.	(WEATHERED		3
							Becomes more grey / less mottled with depth.			-
										-
				3.40	41.33		Trial Dit Complete			
								at 3.40 m		-
										-
										-4
										-
										-
										_
Stability:		Slight	ly unstable in	gravels						
Groundwa	ater:	Slight	seepage of w	ater fro	m 1.4-1.	5mbGL i	n gravels.			
Remarks:									A	GS

RPS							RIA	Trial Pit No. TP8F-008 Sheet 1 of 1		
Project Na	ime:	Mensa	a Remediation	n Works	8	0	N-	167886.75	Ground Level	
Project No).	JER3	996/8S8F			Co-or	E -	468103.86	44.180mOD	Date: 14/08/2008
Location:		AWE	Burghfield			Weat	her:	Cloudy and Warm		Scale 1:25
Client:		AWE	plc			Equip	oment:	JCB 3CX		Logged by: BC
Sam Depth (m)	ples & I Type	n Situ T Ref	esting Results	Depth (m)	Level (m AOD)	Legend		S	Stratum Description	
,							Turf ove	er soft brown, sandy, gravelly, CL ngular to subrounded, fine to coar	AY with frequent rootlets. Gravel rse of chalk and flint. Frequent	-
							brick fra	agments. (TOPSOIL)		-
0.30	E	1		0.30	43.88		Soft to f	firm, brown, mottled orange, very	sandy, gravelly CLAY. Gravel is	
							Frequer	ular to subrounded, fine to coarse nt brick fragments. (MADE GRO	of chalk, flint and mudstone. UND)	-
							2			-
							2			-
							2			-
							2			- 1
1.10 1.10	PID1 D	1	VOCs =8.60ppm	1.10	43.08		Brown,	grey, orange, clayey, sandy GRA	VEL. Gravel is fine to coarse,	
1.10 1.10	XE	1					angular	to subrounded of hint and chaik.	(MADE GROUND)	
1.40	E	3		1.40	42.78		Firm to	stiff, brown mottled orange and g	rey, sandy, gravelly CLAY. Gravel	
							is fine to mudstor	o coarse, subangular to subround ne. (WEATHERED LONDON CL/	led of flint, chalk and AY)	-
							-			
										-
							-			
										- 2
										-
				2.40	11 78					
				2.40	41.70			Trial Pit	Complete at 2.40 m	-
										-
										-
										-3
										-
										-
										-4
										-
Stability:		Unsta	ble in gravels							
Groundwa	ator	11/01-	ingroop free	1 1						
Groundwa	al C I.	vvater	ingress from	1.100	∍∟ in gra	iveis.				
Remarks:										AGS

R	S				TRIAL PIT LOG							Trial Pit No. TP8F-009 Sheet 1 of 1				
Project Name:	Mensa	Remediation	Works	;	0	N -	167860.03		Gr	round Level						
Project No.	JER39	96/8S8F			Co-or	as: E -	468126.08		44	.430mOD	Date:	14/08/2008	}			
Location:	AWE B	Burghfield			Weath	her:	Cloudy and	d Warm			Scale	1:25				
Client:	AWE p	olc			Equip	ment:	JCB 3CX				Logged	by: BC				
Samples & Depth (m) Type	In Situ T	esting Results	Depth (m)	Level (m AOD)	Legend			Strat	tum Descr	ription						
					*****	Turf o coars	ver, soft, brown, g e, angular to suba	rey, sandy, gravelly C ngular of chalk and flir	CLAY. Gravel i int. Frequent b	is fine to prick			-			
0.25 E	1		0.25	11 19		fragm	ents. (MADE GRC)ŬND)	•				-			
0.25 E			0.25	44.10		Soft to to coa and b	o firm, brown, mott arse, subangular to roken bricks. (M	led orange, sandy, gra subrounded of chalk ADE GROUND)	ravelly CLAY. (k and flint. Free	Gravel is fine quent whole						
0.85 PID1 0.85 D 0.85 X 0.85 E	1 1 1 2	VOCs =2.20ppm											- - - -1 -			
			1.30	43.13		Firm t Grave mudst	o stiff, brown, mot el is fine to coarse tone. (WEATHERI	tled orange and grey, s subangular to subrou ED LONDON CLAY)	, sandy, gravel bunded of flint,	lly CLAY. chalk and			-			
							Clay becomes stiffe	er with depth.					-			
													-2			
2.50 E	3												-			
			2.70	41.73				Trial Pit Con	mplete at 2.7	70 m						
													-3			
													-			
													-			
													-			
													-			
Stability:	Stable					-										
Groundwater:	None e	encountered														
Remarks:												A	GS			

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TRIAL PIT LOG

Trial Pit No. **TP8F-010**

		2				••				Sh	eet 1 of ?	1
Project Na	ime:	Mens	a Remediation	n Works	3	Colord	ы. N- 167851.36	Ground Level		40/00		
Project No).	JER3	996/8S8F			C0-010	E - 468116.14	44.630mOD	Date:	13/08	/2008	
Location:		AWE	Burghfield			Weath	er: Rain and Wind.		Scale		1:25	
Client:		AWE	plc			Equipn	nent: JCB 3CX		Logged	by:	DJB	
Sam	ples & I	n Situ	Testing	Depth		legend	Stratum D					
Deptil (III)	туре	Kei	Results	(,			Turf over soft dark brown slightly sandy CLAY. (TO	PSOIL)				
0.10-0.20 0.00-0.80 0.50 0.70-0.80 0.80 0.90-1.00	E D X PID1 E	1 1 2 1 3	VOCs =5.80ppm	0.10 0.80 1.00 1.30	44.53 43.83 43.63 43.33		Soft, light brown, slightly sandy, slightly gravelly, CLA coarse, subangular to subrounded of flint. Frequent r fragments. (MADE GROUND) Soft, black, slightly sandy, CLAY with rootlets (old so GROUND) Damp, orange, brown, clayey, slightly sandy GRAVE coarse, subangular to subrounded of white, brown ar coarse and angular. (MADE GROUND) Pockets of light grey sandy, gravelly CLAY betw 1.6mbGL. Firm to stiff, brown, orange and grey mottled CLAY. LONDON CLAY)	IV. Gravel is fine to red brick il horizon) (MADE L. Gravel is fine to nd grey flint. Sand is reen 1.0mbGL and (WEATHERED				
				2.00								-2
				3.00	41.03		Stiff, damp, grey, mottled brown and orange CLAY. LONDON CLAY) Trial Pit Complete	(WEATHERED				
												-4
Stability:		Slight	tly unstable in	gravels								
Groundwa	ater:	None	encountered									
Remarks:	Remarks: AGS							GS				

RPS	
NFS	

TRIAL PIT LOG

		$\mathbf{\Sigma}$					、		<u> </u>		_	S	neet 1 d	of 1	
Project Na	me:	Mens	a Remediatior	n Works	3	Co-ord	N -	167839.82		Ground Level	Date [.]	13/0	8/2008		
Project No	•	JER3	996/8S8F				E -	468129.41		44.680mOD	Duic.	10/0	0/2000		
Location:		AWE	Burghfield			Weath	er:	Cloudy and Windy			Scale		1:25		-
Client:		AWE	plc	1	<u>г г</u>	Equipn	nent:	JCB 3CX			Logged	by:	DJB		
Depth (m)	Type	n Situ Ref	Results	Depth (m)	Level (m AOD) L	egend		Stra	tum D	escription					
	,			0.10	44.59		Turf ov	ver soft dark brown slightly sandy CLAN	Y. (TOF	PSOIL)					
Depth (m) 0.10-0.20 0.00-0.90 0.50 0.80-0.90 0.90 0.90-1.00	Type E D X PID1 E	Ref 1 1 2 1 3	VOCs =4.60ppm	(m) 0.10 0.90 0.95 3.10 3.60	(m AOD) L 44.58 43.78 43.73 41.58 41.08	.egend	Turf ov Firm, d Gravel Rare c bricks.	Strai rer soft dark brown slightly sandy CLAY lark brown to brown, slightly gravelly C is coarse angular to subrounded of ch subbles of fint. Occasional concrete ble (MADE GROUND) lack, slightly sandy, CLAY with rootlets ND) stiff, brown, orange and grey mottled of N CLAY) ackets of light grey sandy, gravelly CLA accoming greyer / less mottled with dept rey, mottled orange and brown CLAY w (WEATHERED LONDON CLAY) abbles of red/brown mudstone from 3.1 	tum D Y. (TOF LAY with alak and ocks wit (old soi CLAY. AY. th.	escription PSOIL) In numerous rootlets. white and grey flint. h rebar and half red (WEATHERED (WEATHERED asional broken at 3.30 m					
															-
Stability:		Stable	9												-
Cabinty.		Cabi	-												
Groundwa	ater:	None	encountered												
Remarks:													A	G	S

TRIAL PIT LOG

		2					、 17					Sł	neet 1 of 1	
Project Na	ame:	Mens	a Remediatior	n Works	6	- Co-ord	ls [.] N -	167837.25		Ground Level	Date:	13/0	8/2008	
Project No).	JER3	996/8S8F				E -	468142.77		44.590mOD	Date.	13/0	0/2008	
Location:		AWE	Burghfield			Weath	er:	Windy, Cool and Su	unny.		Scale		1:25	
Client:		AWE	plc			Equipn	nent:	JCB 3CX			Logged	by:	DJB	
Sam Depth (m)	ples & I	n Situ Ref	Testing Results	Depth (m)	Level (m AOD)	Legend			Stratum [Description				
Dopur (iii)	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		recound	0.10	11.10		Turf ov	rer soft dark brown slightly sa	indy CLAY. (TO	PSOIL)				
0.10-0.20	E	1	VOCs =11.70ppm	0.10	44.49		Soft, lo Gravel	cally firm, damp, light brown, is fine to coarse, subangular	slightly sandy, v to subrounded of	ery gravelly CLAY. of white and brown				
0.20	FIDI						flint and	d chalk. (MADE GROUND)						-
				0.40	44.19	****	Soft, da	amp, brown, slightly sandy, gr	ravelly CLAY. Gr	ave; is fine to				
0.00-1.00 0.50	D X	1					coarse staining	, subangular to subrounded c g associated with wood fragm	of white brown flin nents. (MADE G	nt and chalk. Black ROUND)				-
							0.5	ooden telegraph pole with an 5mbGL.	1 Odour of cresote	e encountered at				[
														-
														-
					18		×							
1.20	D	2		1.20	43.39	****								
1.20	E	2						Iria	al Pit Complete	at 1.20 m				-
														-
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Stability:		Von												
Glability.		very												
Groundwa	ater:	None	encountered											
Remarks:	Trial pit terminated at 1.2mbGL due to instability.													

RPS	-	TRIAL PIT LOG		Trial Pit No. TP8F-013 Sheet 1 of 1
Project Name: Mensa Remediation	n Works	N- 167847.63	Ground Level	
Project No. JER3996/8S8F		E - 468153.54	44.660mOD	ate: 14/08/2008
Location: AWE Burghfield	W	Veather: Cloudy	s	Scale 1:25
Client: AWE plc	Ec	quipment: JCB 3CX	Lc	ogged by: BC
Depth (m) Type Ref Results	(m) (m AOD) Lege	end Stratum D	Description	
0.30 E 1 0.50-1.00 D 1 0.50-1.00 X 1 0.50-1.00 E 2 1.00 PID1 1 VOCs =1.40ppm 1.50 E 3	0.10 44.56	Turf over soft dark brown slightly sandy, slightly grav frequent rootlets. Gravel is fine to medium, subangu white and brown flint. (TOPSOIL) Soft, brown, very sandy, very gravelly, CLAY. Grave subangular to subrounded of white and brown flint ar whole and fragemented red bricks. (MADE GROUN Firm to stiff, brown, orange and grey mottled, slightly gravelly CLAY. (WEATHERED LONDON CLAY) Occasional lenses of gravel encountered. Grave subangular to subrounded of flint and mudstone Clay becomes stiffer with depth.	elly CLAY with lar to subrounded of l is fine to coarse, nd chalk. Frequent ID) sandy, slightly el is fine to coarse,	-1
Stability: Good	2.50 42.16	Trial Pit Complete	at 2.60 m	
Groundwater: None encountered Remarks:				AGS

SF III (BM 414.8) Standard Trialoit Log v

TRIAL PIT LOG

		2				•••			••••				She	et 1 of 1	
Project Na	ime:	Mensa	a Remediatior	n Works		Colora	. N -	167842.	98		Ground Level		4.4/00	10000	
Project No).	JER3	996/8S8F			0-010	ь. Е-	468172.	06		44.690mOD	Date:	14/08/	2008	
Location:		AWE	Burghfield			Weath	er:	Cloudy				Scale		1:25	
Client:		AWE	plc			Equipr	nent:	JCB 3C	х			Logge	d by:	BC	
Sam	ples & I	n Situ T	esting	Depth		Logond				Ctrotum [Description				
Depth (m)	Туре	Ref	Results	(m)	(m AOD)	Legend	Turf ov frequer flint and	er, loose brow ht rootlets. Gr d chalk (TOF	wn, orange, sa avel is fine to PSOIL)	andy, slightly grave coarse, subangula	Description elly CLAY with ar to subrounded of				-
0.30	E	1		0.25	44.44		Soft, br	own, sandy, g nded of flint a	gravelly CLAY and chalk. Occ	7. Gravel is fine to casional brick and	coarse, angular to wood fragments				-
0.50	х	1		0.50	44.19		Soft to to coar	firm, brown, r se, subangula	nottled orange ar to subround	e, sandy, gravelly (ded of flint, chairs)	at 0.3mbGL. CLAY. Gravel is fine nd mudstone.				-
0.85	D	1					Occasi		e cobbles. (IV	ADE GROUND)					-
0.85 0.85	X	2 2					Gr	avel lense er	ncountered in	eastern pit face at	0.9mbGL.				-1
				1.20	43.49		Firm to Gravel mudsto	stiff, brown, r is fine to coa one. (WEATH	mottled orange arse, subangu IERED LOND	e and grey, sandy, lar to subrounded ON CLAY)	, gravelly CLAY. of flint, chalk and				-
1.50	E	3													-
															-
															-2
					-										-
				2.60	42.09										-
									11		at 2.00 m				-
															-3
															-
															-
															-
															-4
															•
															-
															tated 26th Mar 05
Stability:	I	Stable)		I										rd Trialoit Loo v1
Groundwa	ater:	None	encountered												Wid 414 B) Standa
Remarks:	Concrete boulder (20cm x 30cm) encountered at 0.3mbGL.									S					

TRIAL PIT LOG

		2				••					Sh	neet 1 of	1	
Project Na	me:	Mens	a Remediatior	n Works	5	Coord	. N -	167845.87	Ground Level	Deter	00/0	0/0000		
Project No		JER3	996/8S8F			C0-010	E -	468205.44	43.930mOD	Date:	20/0	8/2008		
Location:		AWE	Burghfield			Weath	er:	Cloudy		Scale		1:25		
Client:		AWE	plc			Equipn	nent:	JCB 3CX		Logged	by:	BC		
Sam	oles & I	n Situ	Testing	Depth	Level			0						
Depth (m)	Туре	Ref	Results	(m)	(m AOD)	Legena	Turf ov	Stratum ver soft, brown, sandy, gravelly CLAY with fre	Description auent rootlets.					
0.00-0.30	Е	1		0.10	43.83		(TOPS	SOIL)					-/	
0.00			V00- 4.00		l B		Loose, subrou	, brown, sandy, gravelly CLAY. Gravel is fine unded of flint and chalk. Frequent brick, metal	to coarse, angular to and wood				-	
0.30	ASB	1	VOCs =1.00ppm	0.40	13 53		Tragme Co	ents. (MADE GROUND) concrete slab encountered at 0.3mbGL - poss	ible concrete railway					
0.30-0.60	D	1		0.40	+0.00		Brown	eeper. Asbestos cement tile encountered at t	el is fine to coarse.				-	
0.30-0.60	Ē	2		0.60	43.33	<u> </u>	angula drain. (ar to subrounded of flint and chalk. Gravel rela (MADE GROUND)	ted to historic land				7	
							Hi	istoric land drain encountered at 0.4mbGL.					_/ {	
							(WEAT	o firm, brown, mottled orange and grey, sandy THERED LONDON CLAY)	CLAY.				-	
				0.90	43.03		Firm-st	tiff, brown, mottled orange and grey, sandy, s	lightly gravelly CLAY.					
							mudsto	one. (WEATHERED LONDON CLAY)	of finite, chaire and				['	
													-	
1.30	E	3											-	
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				2.20	41.73			Trial Pit Complete	e at 2.20 m					
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Stability:		Good												
Groundwa	ater:	None	encountered											
	Concrete elek anoquitored at 0.2mb													
Remarks:		Concrete slab encountered at 0.3mbGL - possible concrete railway sleeper. Asbestos cement tile encountered at 0.3mbGL. Historic land drain encountered at 0.4mbGL.									GS			
F	RF	PS				ΤI	RIA		r log		1	Trial Pit No. FP8F-016 Sheet 1 of 1		
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Project Na	ime:	Mensa	a Remediation	n Works	;	Color	da, N-	167825.76		Ground Level		0/00/0000		
Project No).	JER39	996/8S8F			C0-01	E -	468186.56		43.620mOD	Date: 1	3/08/2008		
Location:		AWE	Burghfield			Weat	her:	Rain and Win	d		Scale	1:25		
Client:		AWE	plc		1	Equip	ment:	Hand Tools			Logged b	y: DJB		
Sam Depth (m)	ples & I Type	n Situ T Ref	esting Results	Depth (m)	Level (m AOD)	Legend			Stratum [Description				
				0.10	43 52		Turf ov	ver soft, brown, sandy	y, gravelly CLAY with free	quent rootlets.				
0.20 0.20 0.20-0.40	PID1 D E	1 1 1	VOCs =1.40ppm	0.10	10.02		Soft to angula fragme	firm, brown, sandy, g r to subrounded of fil ents. (MADE GROUN	gravelly CLAY. Gravel is nt and chalk. Frequent bi D)	iine to coarse, ick, metal and wood				
0.50-1.00	х	1										-		
0.90-1.10	E	2		1.20	42.42							-1		
									Trial Pit Complete	at 1.20 m		-		
												- 3		
												- 4		
Stability:		Stable	2	I	I	<u> </u>	<u> </u>							
Groundwa	ater:	None	encountered											
Remarks:		Trial p to 1.2	it terminated a mbGL using H	at 1.2m Iand To	bGL due ols.	to proxi	mity of	steam pipe and	I buried services.	TP was excavated		AGS		

HoleBASE III (Bid 414.8) Standard Trialpit Log v1 dated 26th Mar 03

F	<u>R</u>	<u> </u>				TI	RI/	AL PIT	LOG		T	Trial Pit No P8S-00 Sheet 1 of 1	1
Project Na	ime:	Mens	a Remediation	n Works	6	Co-or	ds: N -	168217.05		Ground Level	Date: 18	3/08/2008	
Project No).	JER3	996/8S8F			14/aath	E -	468039.88		44.170mOD		4.05	
Client:						Fauin	mont:		ain		Scale	1:25	
Sam	ples & I	n Situ	Testing	Depth	Level			300 307				0.000	
Depth (m)	Туре	Ref	Results	(m)	(m AOD)	Legend	Soft to	firm brown mottled era	Stratum D	Description			
0.90	E PID1 D X E	1 1 1 2 3	VOCs =1.40ppm	0.80 2.90 3.00	43.37 41.27 41.17		Soft to fragme	firm, brown, mottled ora ents and concrete cobble prown, mottled orange, s m, subangular of flint. (rown, grey CLAY with oc THERED LONDON CLA	nge, sandy CLAY with s. (MADE GROUND lightly gravelly CLAY. WEATHERED LOND	nts.			-1
Stability:		Stable	e										- 4
Stability:		Stable	t .										
Groundwr	ater	Dom-	at 1 95mhCl										
Remarks:		υαπμ										AG	S

F	RF	PS				ΤI	RIAL PIT LOG		Trial Pit No. TP8S-002 Sheet 1 of 1							
Project Na	me:	Mensa	a Remediatior	n Works	3	Co. 07	da, N - 168212.17	Ground Level	D /							
Project No		JER39	996/8S8F			C0-01	E - 468121.91	44.040mOD	Date: 18/08/2008							
Location:		AWE	Burghfield			Weat	ner: Sunny and Cloudy		Scale 1:25							
Client:		AWE	plc		1	Equip	ment: JCB 3CX		Logged by: CJW							
Depth (m)	Dies & I	n Situ I Ref	Results	Depth (m)	Level (m AOD)	Legend	Stratum	Description								
0.90 1.00 1.00 1.00 1.00	E PID1 D X E	1 1 1 2	VOCs =2.70ppm	0.50	43.54		Firm, brown, mottled orange and grey, sandy, gravel brick fragments. Gravel is fine to medium, subangul flint. (MADE GROUND) Concrete boulder encountered at 0.4mbGL. Firm, brown, mottled orange, slightly gravelly CLAY carbonaceous inclusions. Gravel is fine to medium, s (MADE GROUND) Band of fine to medium, subangular to subround encountered at 1.0mbGL. Firm to stiff, brown, mottled orange and grey, sandy, CLAY. Gravel is fine to coarse, subangular to subround and mudstone. (WEATHERED LONDON CLAY)	Vith rare subangular of flint.	-1							
3.00	E	3		3.00	41.04		Shell fragements from 2.8mbGL.									
									- 4							
Stability:	Į	Stable)													
Groundwa	ater:	Damp	at 2.7mbGL.													
Remarks:		0.4m t Concr	hick layer of f ete boulder ei	ill/work	ed groun ered at 0	nd had be .4mbGL.	een put on approximately 1 week prior to	investigation.	AGS							

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Project Name Mercias Remediation Works Condit. 1 168215.65 Ground Level Date 1808/2008 Project Name Mercias Remediation Works Condit. N 168215.65 Ground Level Date 1208/2008 Condit. A VE pic Condit. Vector Counter. Cold Remediation Works Ease 125 Condit. Mercias Resultan Depth Interf Counter. Counter. </th <th>F</th> <th>RF</th> <th>PS</th> <th></th> <th></th> <th></th> <th>ΤI</th> <th>RIAL PIT LC</th> <th>)G</th> <th>Trial Pit No. TP8S-003 Sheet 1 of 1</th> <th>3</th>	F	RF	PS				ΤI	RIAL PIT LC)G	Trial Pit No. TP8S-003 Sheet 1 of 1	3
Image: 1.8 JEE 30968987 Vertice Vertice Vertice Socie 1.25 Control AWE Barghfield Vertice County and Winny Socie 1.25 Dirph (m) Vertice Vertice Vertice Statum Description Vertice Vertice<	Project Na	me:	Mensa	Remediation	n Works	6	2	, N- 168215.65	Ground Level		
Instance AVME Encyclination Scale 1.25 Concerner AVME Formalize Description Logan hy: Curve Production under curve or	Project No).	JER39	96/8S8F			Co-or	E - 468064.55	44.140mOD	Date: 18/08/2008	
Other Description Description Description Description Provide the transmission Test Provide the transmit the transmission	Location:		AWE B	Burghfield			Weat	her: Cloudy and Windy	· · ·	Scale 1:25	
Image: Second	Client:		AWE p	blc			Equip	ment: JCB 3CX		Logged by: CJW	
1 1	Sam	ples & I	n Situ To Ref	esting Results	Depth (m)	Level (m AOD)	Legend	St	tratum Description		
Stability: Stable Groundwater: Water ingress at 1.7mbGL. Remarks:	Sam Depth (m) 0.80 1.10 1.10 1.10 1.10	E PID1 D X E	n Situ To Ref 1 1 1 2	vocs =0.80ppm	Depth (m) 1.20 2.20 3.00	Level (m AOD) 42.94 41.94 41.14		St Firm brown, mottled orange and grey, gra and broken bricks, and concrete cobbles. Firm, brown, grey mottled blue CLAY. (W Band of fine to medium, subangular t encountered at 1.7mbGL. Firmt to stiff, brown, grey, blue sandy, sligt bands of orange sand. Gravel is fine to me subrounded of flint and chalk. (WEATHE Trial Pit 0	tratum Description velly CLAY with frequent whole (MADE GROUND) //EATHERED LONDON CLAY) o subrounded flint gravel htly gravellt CLAY with regular edium, subangular to (RED LONDON CLAY) Complete at 3.00 m		
Stability: Stable Groundwater: Water ingress at 1.7mbGL. Remarks: AGS											-
Groundwater: Water ingress at 1.7mbGL. Remarks: AGS	Stability:	<u> </u>	Stable		<u> </u>	1	1	<u> </u>			
	Groundwa Remarks:	ater:	Water	ingress at 1.7	7mbGL.					AG	S

F	RF	PS				ΤI	RIAL PIT L	.OG	Trial Pit No. TP8S-004 Sheet 1 of 1	
Project Na	me:	Mensa	Remediation	ו Works ו	;	_	N- 168193.82	Ground Lev	rel	_
Project No		JER3	996/8S8F			Co-or	E - 468111.16	43.950mOD	Date: 15/08/2008	
Location:		AWE	Burghfield			Weath	er: Sunny and Cloudy	•	Scale 1:25	
Client:		AWE	plc		1	Equip	ment: JCB 3CX		Logged by: CJW	
Samp Depth (m)	bles & I Type	n Situ 1 Ref	Results	Depth (m)	Level (m AOD)	Legend		Stratum Description		
Samp Depth (m) 0.60 0.90 0.90 0.90 0.90 1.40	E PID1 X E E	n Situ 1 Ref 1 1 2 3	esting Results	Depth (m) 0.40 1.30	Level (m AOD) 43.55 42.65 40.95		Firm, brown, mottled orange gravelly fragments and rootlets. Gravel is fin GROUND) Firm, brown, orange, mottled grey si to medium, angular to subrounded o Black staining/colouration obse Orange/yellow band of sand en Firm to stiff, brown, mottled orange a CLAY. Gravel is fine to coarse, subz and mudstone. (WEATHERED LO	Stratum Description / CLAY with occasional brick e to medium of flint. (MADE andy gravelly CLAY. Gravel is very f if flint. (MADE GROUND) rved in clay 0.5 to 1.3mbGL. countered at 1.1mbGL. and grey, sandy. slightly gravelly angular to subrounded of flint, chalk NDON CLAY) I Pit Complete at 3.00 m		1 2 3
Stobility		Stable	L						- - - - - -	
Stability:		Stable	;							
Groundwa	ater:	Water	ingress at 1.3	35mbGI	L and 2.4	4mbGL fr	om clay.			
Remarks:		0.4m	hick layer of f	ill/worke	ed grour	nd had be	en put on approximately 1 w	eek prior to investigation.	AGS	

F	RF	PS				Η	AN	ID PIT LOG			Trial Pit No. HP8S-001 Sheet 1 of 1	1
Project Na	me:	Mens	a Remediatior	n Works	6	- Co-or	ds. N-	168259.45	Ground Level	Data:	26/09/2009	
Project No		JER3	996/8S8F				E -	468013.17	43.760mOD	Date.	20/08/2008	
Location:		AWE	Burghfield			Weat	ner:	Sunny and Cloudy		Scale	1:25	
Client:		AWE	plc Facting			Equip	ment:	Hand Tools		Logged	by: CJW	
Depth (m)	Type	Ref	Results	Depth (m)	Level (m AOD)	Legend		Stratum	Description			
						****	Firm b angula	rown slightly sandy, gravelly CLAY. Gravel is ar to subrounded of brick and flint. (MADE G	fine to coarse, ROUND)			-
												-
												-
0.50		1										-
0.50	D	1	VOO3 _0.00ppm									-
0 50-1 00	F	1		0.70	43.06	<u> </u>	Firm to	o stiff brown and grey mottled slightly sandy C	LAY.			-
0.50-1.00	x	1					(WEA	THERED LONDON CLAY)				-
												-1
												-
				1.20	42.56			Trial Pit Complet	e at 1.20 m			
												-
												-
												-
												-
												-2
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												-
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<u> </u>		0 ,										_
Stability:		Stable	e									
Groundwa	ator.	None	oncountered									
Grounawa		INONE	encountered									
Remarks:												S
											AG	

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HoleBASE III (Bki 414.8) Standard Trialpit Log v1 dated 26th Mar 03

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RPS		HAN	D PIT LOG		I rial Pit No. HP8S-002 Sheet 1 of 1
Project Name: Mensa Rem	nediation Works	N-	168244.28	Ground Level	
Project No. JER3996/8	S8F	E -	468042.50	44.230mOD	Date: 18/08/2008
Location: AWE Burgh	nfield	Weather:	Cloudy and Warm	S	Scale 1:25
Client: AWE plc		Equipment:	Hand Tools		ogged by: BC
Depth (m) Type Ref Ref	esults (m) (m AOD) I	egend	Stratum D	escription	
0.60 PID1 1 VOCs 0.60 D 1	=1.20ppm 0.60 43.63	Gorarse, brick fra GROUN	minibilities of angle, saidy, gravely CEAT and chalk. (gments, concrete cobbles, rebar and wood pi D) rm, brown, mottled orange, sandy, gravelly C e, subangular to subrounded of fiint, chalk an	LAY. Gravel is fine d mudstone.	
0.60 E 1 0.60 X 1	1.20 43.03		nal brick řragments. (MADE GROUND)	at 1.20 m	-1-1
					-2
					-3
					-4
Stability: Good		ļ			
Groundwater: None encou	untered				AGS

HoleBASE III (Bki 414.8) Standard Trialpit Log v1 dated 26th Mar 03

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F	RF	PS				H	AND PIT LOG		Trial Pit No. HP8S-003 Sheet 1 of 1
Project Na	ime:	Mensa	a Remediation	Works			_{ds:} N - 168231.36	Ground Level	Data: 19/09/2009
Project No).	JER3	996/8S8F			00-01	E - 468109.03	43.160mOD	Dait. 10/U0/2000
Location:		AWE	Burghfield			Weath	her: Cloudy and Warm		Scale 1:25
Client:	nlo- ^ '	AWE	plc			Equip	ment: Hand Tools		Logged by: BC
Depth (m)	Type	Ref	Results	Depth (m)	Level (m AOD)	Legend	Stratum	Description	
Depth (m)	PID1 D E X	Ref	VOCs =2.80ppm	(m) 0.40 0.80	42.76 42.36		Soft brown mottled orange, sandy, gravelly CLAY. coarse, subangular to subrounded of flint and chall brick fragments, concrete cobbles, rebar and wood GROUND) Soft damp, brown mottled orange with areas of bla gravelly CLAY. Gravel is fine to coarse, subangula and chalk. (MADE GROUND) Trial Pit Complet	Description Gravel is fine to , Occasional red pieces. (MADE ck staining, sandy, r to subrounded of flint re at 0.80 m	
Stability:	I	Unsta	ble from 0.4m	bGL du	e to wate	er ingres	S.		
						0 - 0			
Groundwa	ater:	Slight	water ingress	at 0.4n	nbGL.				
Remarks:									AGS

R	Pς

HAND PIT LOG

		<u> </u>					,					S	heet 1 of	1
Project Na	ime:	Mens	a Remediatior	n Works	6		Co-ords	. N -	168206.83	Ground Level	Deter	10/0	0/2000	
Project No).	JER3	996/8S8F				50-0103	Е-	468127.79	43.950mOD	Date:	18/0	18/2008	
Location:		AWE	Burghfield			۷	Veathe	r:	Cloudy, Light Rain		Scale		1:25	
Client:		AWE	plc			E	Equipm	ent:	Hand Tools		Logged	d by:	CJW	
Sam	ples & I	n Situ	Testing Results	Depth (m)	Level (m AOD)	Lea	lend		Stratum	Description				
Dopur (III)	Type	1.01	rtoouno		(- /	888	88	Soft da	irk brown, sandy, slightly gravelly CLAY with	frequent rootlets and				
				0.15	43.80	***	₩-	GROU	ND)	ed of filmt. (MADE				
						**	××	Soft ora	ange sandy CLAY. (MADE GROUND)					-
						**	₩.							-
0.00.1.00		4				**	××							-
0.00-1.20	E	1				**	▓.							_
0.00-1.20	X	1		0.80	43.15	**	<u>~~</u>	Soft to	firm grey brown sandy CLAY (WEATHER					
									, g, , ,	,				-
														-1
1.20	PID1	1	VOCs =1.70ppm	1.20	42.75									
									I rial Pit Complete	e at 1.20 m				-
														-
														-
														-
														_
														-
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Stability		Stabl												
Glability.		Glabit												
Groundwa	ater:	None	encountered											
Remarks:													A	GS

Appendix C

Gas and Groundwater Monitoring Results

Gas and Groundwater Monitoring Round 1

Job Name: Mensa Remediation Works	
Job Number: JER3996/8S28F2	

Date: 01/09/08

Staff Name: DJB

			Flow	' (l/hr)	VC (PI	DCs pm)	CH4 ((%/vol)		CO2 (%/vol)	02 (%/vol)						Notes on Gas		
Hole ID	Time of reading	Temp ('C)	Atmospheric Pressure (Mb)	DP Pa	Peak	Average	Peak	Average	Peak	Average	Peak LEL (%)	Peak	Average	Peak	Average	Peak H2S (%)	Peak CO (%)	Groundwater Level (mbTIC)	Well Base (mbTIC)	Correction to Ground Level (m)	Concentration/flow durations, average gas concentrations etc
BH8F-001			1008	-16	-10	-0.4	15.8	12.8	0.0	0.0	0.0	0.1	0.1	21		0.0	0.0	0.84	6.06	0.12	No Temperature Probe
BH8F-003			1008	0.0	0.4	0.0	47.2	2 42.3	0.0	0.0	0.0	0.1	0.1	21.0)	0.0	0.0	5.73	14.88	0.07	No Temperature Probe
BH8F-002			1007	-0.6	-0.1	-0.1	16.1	14.2	0.0	0.0	0.0	0.7	0.7	19.0)	0.0	0.0	3.12	6.01	0.12	No Temperature Probe
BH8S-002			1009	-1.3	-0.2	-0.2	24.4	24.4	0.0	0.0	0.0	0	0	20.8		0.0	0.0	1.47	6.61	0.20	No Temperature Probe
BH8S-001			1008	-1.7	-0.3	-0.3	23.2	2 19.7	0.0	0.0	0.0	0	0	21.5	5	0.0	0.0	5.64	16.58	0.09	No Temperature Probe

Gas and Groundwater Monitoring Round 2 Job Name: Mensa Remediation Works Job Number: JER3996/8S28F2

Date: 18/09/08

Staff Name: DJB / RJ

					Flow	(l/hr)	VC (p	DCs pm)	CH4	(%/vol)		CO2	(%/vol)	02 (%/vol)						Notes on Gas
Hole ID	Time of reading	Temp ('C)	Atmospheric Pressure (Mb)	DP Pa	Peak	Average	Peak	Average	Peak	Average	Peak LEL (%)	Peak	Average	Peak	Average	Peak H2S (%)	Peak CO (%)	Groundwater Level (mbTIC)	Well Base (mbTIC)	Correction to Ground Level (m)	Concentration/flow durations, average gas concentrations etc
BH8F-001	11:30	17.8	1018	-1.0	-0.4	0.0	0.9	0.7	0.0	0.0	0.0	3.1	3.1	16.3	16.3	0.0	0.0	2.87	5.52	0.12	
BH8F-003	13:45	19.5	1016	-4.0	-4.9	0.0	2.4	2.0	0.0	0.0	0.0	0.3	0.3	20.6	20.6	0.0	0.0	5.68	15.80	0.07	
BH8F-002	14:35	13.9	1016	0.0	-0.2	0.0	0.1	0.1	0.0	0.0	0.0	8.2	8.2	10.5	5 10.5	0.0	0.0	3.70	5.87	0.12	
BH8S-002	09:50	15.3	1017	3.0	3.4	0.0	0.3	0.1	0.0	0.0	0.0	1.6	0.7	19.8	19.8	0.0	0.0	1.39	6.44	0.20	
BH8S-001	10:05	15.2	1018	0.0	-0.1	0.0	1.9	1.7	0.0	0.0	0.0	1.1	1.0	17.0) 17.0	0.0	0.0	5.69	16.77	0.09	

Gas and Groundwater Monitoring Round 3 Job Name: Mensa Remediation Works Job Number: JER3996/8S28F2

Date: 30/09/08

Staff Name: CJW

					Flow	' (l/hr)	VC (p	DCs pm)	CH4 ((%/vol)		CO2 (%/vol)	02 (%/vol)						Notes on Gas
Hole ID	Time of reading	Temp ('C)	Atmospheric Pressure (Mb)	DP Pa	Peak	Average	Peak	Average	Peak	Average	Peak LEL (%)	Peak	Average	Peak	Average	Peak H2S (%)	Peak CO (%)	Groundwater Level (mbTIC)	Well Base (mbTIC)	Correction to Ground Level (m)	Concentration/flow durations, average gas concentrations etc
BH8F-001		13.6	1002	0.4	5.6	0.2	10.2	8.5	0.0	0.0	0.0		1.4		18.8	0.0	0.0	3.53	5.92	0.12	Constant Beep from 4.80m
BH8F-003		14.4	1001	-1.7	-4.8	-0.4	23.6	16.0	0.0	0.0	0.0		0.5		17.8	0.0	0.0	6.08	16.88	0.07	
BH8F-002		12.3		-2.0	-6.0	-0.4	23.2	19.4	0.0	0.0	0.0	6.8	6.8	14.0	8.8	0.0	0.0	3.73	5.88	0.12	
BH8S-002		12.9	1000	-3.7	-4.4	-0.6	63.3	46.8	0.0	0.0	0.0	0.6	0.6		21.0	0.0	0.0	1.62	6.43	0.20	PID - Clear Sensor Message
BH8S-001		13.4	1000	-6.5	-4.5	-0.4	109.0	24.8	0.0	0.0	0.0	1.0	1.0	19.6	19.6	0.0	0.0	5.79	17.75	0.09	J

Water Quality Sheet						_													
Project Name		Mens	a Remediation \	Norks															
Project No.			JER3996																
Date			04/09/2008																
							D	0											
Borehole	Sample No	Date	Time	Temp	pН	EC	%	ррт	TDS	SAL	ORP	-pHmV	Purge Volume (litres)	Pre purge Dip (mbTIC)	Pre purge Base (mbTIC)	Post purge Dip (mbTIC)	Post purge Base (mbTIC)	Correction to Ground Level (m)	Comments
BH8F-002	1	04/09/08	11:00	15.77	7.72	3412	53.0	5.10	1710	1.81	-134.5	-67.3	15.00	5.73	14.88	6.84	15.78	0.07	
	2	04/09/08	11:10	14.09	7.12	3778	535.0	3.48	1896	2.02	-144.6	-37.1	35.00						
	3	04/09/08	11:20	13.82	7.53	2881	32.1	3.13	1441	1.51	-181.2	-58.5	50.00						
BH8F-003	1	04/09/08	12:00	14.39	7.13	5309	75.4	7.44	2656	2.89	-177.9	-36.0	6.00	3.12	6.01	5.37	6.01	0.12	
	2	04/09/08	12:20	13.86	6.69	6631	77.9	7.84	3318	3.60	-185.4	-13.1	12.00						

Water Quality Sheet	t																		
Project Name		Mens	a Remediation \	Vorks															
Project No.			JER3996																
Date			16/09/2008				_	-	1										
Borehole	Sample No	Date	Time	Temp	рH	EC	D	DD	TDS	SAL	ORP	-pHmV	Purge Volume	Pre purge Dip (mbTIC)	Pre purge Base (mbTIC)	Post purge Dip (mbTIC)	Post purge Base (mbTIC)	Correction to Ground Level (m)	Comments
					P		,.	PP		.		P	((()	
BH8F-001	1	16/09/08	11:45	14.92	7.40	4099	62.1	6.17	2051	2.19	-134.3	-13.5	6.00	2.87	5.52	5.07	5.91	0.12	
	2	16/09/08	11:50	14.71	7.26	4261	73.2	7.30	2135	2.29	-125.0	-9.9	12.00						
	3	16/09/08	11:55	15.34	7.28	4266	63.9	6.23	2110	2.26	-121.7	-8.5	18.00)					
BH8F-002	1	16/09/08	13·55	15 12	8 27	3034	47.2	4 66	1506	1 56	-159.0	-57 5	30.00	5.68	15.80	6 31	16.20	0.07	
Brior 002		10/00/00	10.00	10.12	0.27	0004	-17.2	4.00	1000	1.00	100.0	07.0	00.00	0.00	10.00	0.01	10.20	0.07	
	2	16/09/08	14:10	14.94	7.56	2614	30.0	3.01	1504	1.36	-150.4	-29.8	40.00)					
	3	16/09/08	14:20	13.74	7.63	1893	38.3	3.84	946	0.97	-124.2	-32.1	60.00)					
BH8F-003	1	16/09/08	14:40	15.23	8.71	5636	59.7	5.26	2833	3.10	-162.0	-44.5	4.00	3.70	5.87	5.05	5.89	0.12	
	2	16/09/08	14:50	13.63	7.46	6004	54.0	5.42	3004	3.29	-156.5	-16.1	8.00)					
	3	16/09/08	14:55	13.29	7.30	6101	57.6	5.89	3053	3.35	-153.0	-8.7	12.00)					
BH8S-001	1	16/09/08	09:55	14.43	7.74	3264	76.0	7.58	1631	1.72	-144.0	-24.3	10.00	1.39	6.44	5.19	6.44	0.20	
	2	16/09/08	10:00	14.09	7.20	3429	72.6	7.40	1741	1.81	-122.1	-14.9	20.00)					
	3	16/09/08	10:05	14.43	7.21	3523	79.0	8.04	1760	1.87	-118.2	-11.1	30.00)					
BH8S-002	1	16/09/08	10:40	13.28	7.70	2800	43.4	4.48	1401	1.47	-171.5	-33.0	20.00	5.69	16.77	5.73	16.77	0.11	
	2	16/09/08	10:50	13.33	7.59	2521	46.5	4.78	1261	1.31	-179.2	-28.7	40.00)					
	3	16/09/08	11:00	13.52	7.62	2236	51.3	5.30	1117	1.16	-175.5	-31.5	60.00)					

Water Quality Sheet																			
Project Name		Mens	a Remediation	Norks															
Project No.			JER3996																
Date			30/09/2008					1											
i -						1	D	0									1	Correction to	
													Purge Volume	Pre purge Dip	Pre purge	Post purge	Post purge	Ground Level	
Borehole	Sample No	Date	Time	Temp	рН	EC	%	ppm	TDS	SAL	ORP	-pHmV	(litres)	(mbTIC)	Base (mbTIC)	Dip (mbTIC)	Base (mbTIC)	(m)	Comments
BH8F-001	1	30/09/08	11:00	14.48	8.55	4957	85.9	8.40	2475	2.68	-165.1	-52.9	5.00	3.53	5.92	5.30		0.12	
	2	30/09/08	11:10	14.34	7.70	5099	78.4	7.52	2554	2.77	-154.1	-26.3	10.00						
	3	30/09/08	11:20	14.27	7.43	5199	81.7	8.80	2575	2.79	-145.4	-16.6	15.00						
BH8F-002	1	30/09/08	11:30	13.31	7.79	3056	750.0	7.36	1534	1.62	-161.5	-38.0	15.00	6.08	16.88	6.77		0.07	
	2	30/09/08	11:40	13.29	7.75	2318	82.2	8.21	1185	1.23	-144.5	-35.7	30.00						
	3	30/09/08	11:50	13.51	7.62	2354	74.1	7.25	1178	1.22	-130.7	-32.1	45.00						
	4	30/09/08	12:00	13.37	7.63	2303	87.7	8.46	1157	1.19	-117.3	-30.7	60.00						
BH8F-003	1	30/09/08	12:15	13.67	9.12	5813	91.2	8.91	2962	3.24	-155.5	-57.7	6.00	3.73	5.88	5.25		0.12	
	2	30/09/08	12:25	13.21	7.23	6222	82.8	8.02	3120	3.43	-135.1	-3.0	12.00						
BH8S-001	1	30/09/08	14:00	13.74	9.80	3680	89.7	882.00	1848	1.97	-164.9	-80.3	12.00	1.62	6.43	4.54		0.20	
	2	30/09/08	14:15	13.57	7.96	3649	95.9	9.77	1829	1.94	-139.6	-37.2	24.00						
													-						
BH8S-002	1	30/09/08	14:30	13.17	7.61	2561	30.7	3.10	1430	1.50	-194.1	-29.0	25.00	5.79	17.75			0.11	
	2	30/09/08	14:40	13.98	7.51	2840	38.8	3.82	1420	1.49	-195.3	-25.9	50.00						
	3	30/09/08	14:55	12.96	7.43	2810	32.7	3.18	1443	1.39	-196.1	-27.3	75.00						

Appendix D

Explosives Results – Soils

BAE Systems Property & Environmental Brisance House Euxton Lane Chorley Lancashire PR7 6AQ, England Telephone: (01257) 242000 Facsimile : (01257) 242018

TEST CERTIFICATE

Certificate No: BC0882/08

Site : AWE B	Burghfield JER3996		Ref : A0009/08	
Client :	RPS Planning and Develop	oment	Date Received :	26/08/2008
Address :	St Anne's House		Date Completed :	09/09/2008
	Oxford Square Oxford Street Newbury		Date Of Report :	09/09/2008
	RG14 1JQ		Attention :	Chris Warde
Accreditation Ke	<u>ey</u> : U = UKAS	M = UKAS & MCERTS	# = Subcontracted	l Tests

Test Methods

Residential explosives

using method ESAL/QC/4 parts a, k, n and either I or m

Approved :

Dr D.G. Malcolm Laboratory Manager



No. 1764 ESAL/DOC 81/v2 Mrs S. Marriott Deputy Laboratory Manager

Mr M. Lattughi Senior Analyst Mr D.C. Poole Senior Analyst



Report Page 1 of 4

Soil - Defence (Part 1 of 7)

Lab Code	20	085546		20	0085547		20	0085548		20	0085549	
Client Ref A	TF	P8F-001		T	P8F-002		Т	P8F-003		Т	P8F-004	
Client Ref B		0.75m			0.6m			0.6m			0.5m	
Sample Type		Soil			Soil			Soil			Soil	
Soil Type	Cla	y - Brown		Cla	y - Brown		Cla	iy - Brown		Cla	ıy - Brown	
NC Colour	-ve		м	-ve		м	-ve		м	-ve		м
NC Colourimetric	<5000	mg/kg	М	<5000	mg/kg	м	<5000	mg/kg	м	<5000	mg/kg	м
HMX	<2	mg/kg	м	<2	mg/kg	м	<2	mg/kg	м	<2	mg/kg	м
RDX	<2	mg/kg	м	<2	mg/kg	м	<2	mg/kg	м	<2	mg/kg	м
EGDN	<0.1	mg/kg	М	<0.1	mg/kg	м	<0.1	mg/kg	м	<0.1	mg/kg	м
Tetryl	<1	mg/kg	м	<1	mg/kg	м	<1	mg/kg	м	<1	mg/kg	м
NG	<0.1	mg/kg	м	<0.1	mg/kg	м	<0.1	mg/kg	м	<0.1	mg/kg	м
TNT	<0.5	mg/kg	М	<0.5	mg/kg	М	<0.5	mg/kg	М	<0.5	mg/kg	М
PETN	<5	mg/kg	м	<5	mg/kg	М	<5	mg/kg	м	<5	mg/kg	М
HNS	<0.5	mg/kg	М	<0.5	mg/kg	м	<0.5	mg/kg	м	<0.5	mg/kg	м
Picrite	<0.25	mg/kg	М	<0.25	mg/kg	М	<0.25	mg/kg	М	<0.25	mg/kg	М
Picric Acid	<0.1	mg/kg	м	<0.1	mg/kg	м	<0.1	mg/kg	м	<0.1	mg/kg	м
2,4-DNT	<1	mg/kg	М	<1	mg/kg	м	<1	mg/kg	м	<1	mg/kg	м
2,6-DNT	<1	mg/kg	М	<1	mg/kg	М	<1	mg/kg	М	<1	mg/kg	М

Soil - Defence (Part 2 of 7)

Lab Code	20	0085550		20	0085551		20	0085552		20)085553	
Client Ref A	TI	P8F-005		TI	P8F-006		Т	P8F-007		T	P8F-008	
Client Ref B	0	.1-0.3m		0	.1-0.3m			0.5m			1.1m	
Sample Type		Soil			Soil			Soil			Soil	
Soil Type	Cla	y - Brown										
NC Colour	-ve		м									
NC Colourimetric	<5000	mg/kg	М									
HMX	<2	mg/kg	М									
RDX	<2	mg/kg	М									
EGDN	<0.1	mg/kg	м									
Tetryl	<1	mg/kg	м									
NG	<0.1	mg/kg	М									
TNT	<0.5	mg/kg	М									
PETN	<5	mg/kg	М									
HNS	<0.5	mg/kg	М									
Picrite	<0.25	mg/kg	м									
Picric Acid	<0.1	mg/kg	м									
2,4-DNT	<1	mg/kg	М									
2,6-DNT	<1	mg/kg	М									

Soil - Defence (Part 3 of 7)

Lab Code	20	085554		20	0085555		20	0085556		20)085557	
Client Ref A	TF	P8F-009		Т	P8F-010		Т	P8F-011		Т	P8F-012	
Client Ref B		0.85m			0.5m			0.5m			0.5m	
Sample Type		Soil			Soil			Soil			Soil	
Soil Type	Cla	y - Brown		Cla	y - Brown		Cla	ay - Brown		Cla	y - Brown	
NC Colour	-ve		м	-ve		м	-ve		м	-ve		М
NC Colourimetric	<5000	mg/kg	М	<5000	mg/kg	м	<5000	mg/kg	м	<5000	mg/kg	М
HMX	<2	mg/kg	М	<2	mg/kg	м	<2	mg/kg	М	<2	mg/kg	М
RDX	<2	mg/kg	м	<2	mg/kg	м	<2	mg/kg	м	<2	mg/kg	М
EGDN	<0.1	mg/kg	М	<0.1	mg/kg	м	<0.1	mg/kg	м	<0.1	mg/kg	М
Tetryl	<1	mg/kg	М	<1	mg/kg	м	<1	mg/kg	м	<1	mg/kg	М
NG	<0.1	mg/kg	М	<0.1	mg/kg	м	<0.1	mg/kg	м	<0.1	mg/kg	М
TNT	<0.5	mg/kg	М	<0.5	mg/kg	м	<0.5	mg/kg	М	<0.5	mg/kg	М
PETN	<5	mg/kg	М	<5	mg/kg	м	<5	mg/kg	М	<5	mg/kg	М
HNS	<0.5	mg/kg	М	<0.5	mg/kg	м	<0.5	mg/kg	м	<0.5	mg/kg	М
Picrite	<0.25	mg/kg	М	<0.25	mg/kg	м	<0.25	mg/kg	М	<0.25	mg/kg	М
Picric Acid	<0.1	mg/kg	М	<0.1	mg/kg	м	<0.1	mg/kg	М	<0.1	mg/kg	М
2,4-DNT	<1	mg/kg	М	<1	mg/kg	м	<1	mg/kg	м	<1	mg/kg	м
2,6-DNT	<1	mg/kg	М	<1	mg/kg	м	<1	mg/kg	М	<1	mg/kg	М

Soil - Defence (Part 4 of 7)

Lab Code	20	085558		20	0085559		20	0085560		20	0085561	
Client Ref A	TI	P8F-013		TI	P8F-014		Т	P8F-015		T	P8F-016	
Client Ref B	0	.5-1.0m			0.5m			0.6m		0	.5-1.0m	
Sample Type		Soil			Soil			Soil			Soil	
Soil Type	Cla	y - Brown		Cla	y - Brown		Top So	oil (Standard)	Cla	y - Brown	
NC Colour	-ve		М	-ve		м	-ve		м	-ve		М
NC Colourimetric	<5000	mg/kg	М	<5000	mg/kg	м	<5000	mg/kg	м	<5000	mg/kg	М
HMX	<2	mg/kg	м	<2	mg/kg	м	<2	mg/kg	м	<2	mg/kg	М
RDX	<2	mg/kg	м	<2	mg/kg	м	<2	mg/kg	м	<2	mg/kg	М
EGDN	<0.1	mg/kg	М	<0.1	mg/kg	м	<0.1	mg/kg	м	<0.1	mg/kg	М
Tetryl	<1	mg/kg	м	<1	mg/kg	м	<1	mg/kg	м	<1	mg/kg	М
NG	<0.1	mg/kg	М	<0.1	mg/kg	м	<0.1	mg/kg	м	<0.1	mg/kg	М
TNT	<0.5	mg/kg	М	<0.5	mg/kg	М	<0.5	mg/kg	М	<0.5	mg/kg	М
PETN	<5	mg/kg	М	<5	mg/kg	М	<5	mg/kg	М	<5	mg/kg	м
HNS	<0.5	mg/kg	М	<0.5	mg/kg	М	<0.5	mg/kg	М	<0.5	mg/kg	М
Picrite	<0.25	mg/kg	М	<0.25	mg/kg	М	<0.25	mg/kg	М	<0.25	mg/kg	М
Picric Acid	<0.1	mg/kg	М	<0.1	mg/kg	М	<0.1	mg/kg	М	<0.1	mg/kg	М
2,4-DNT	<1	mg/kg	м	<1	mg/kg	м	<1	mg/kg	м	<1	mg/kg	М
2,6-DNT	<1	mg/kg	М	<1	mg/kg	М	<1	mg/kg	М	<1	mg/kg	М

Soil - Defence (Part 5 of 7)

Lab Code	20	085562		20	0085563		2	0085564		20)085565	
Client Ref A	TF	P8S-004		В	H8F-002			BH8F-003			FP8S-001	
Client Ref B		0.9m			0.6m		C).5-0.8m			1.1m	
Sample Type		Soil			Soil			Soil			Soil	
Soil Type	Cla	y - Brown		Top So	oil (Standard)	Cla	ay - Brown		Cla	y - Brown	
NC Colour	-ve		М	-ve		м	-ve		М	-ve		М
NC Colourimetric	<5000	mg/kg	М	<5000	mg/kg	м	<5000	mg/kg	М	<5000	mg/kg	М
HMX	<2	mg/kg	М	<2	mg/kg	М	<2	mg/kg	М	<2	mg/kg	М
RDX	<2	mg/kg	м	<2	mg/kg	м	<2	mg/kg	м	<2	mg/kg	м
EGDN	<0.1	mg/kg	М	<0.1	mg/kg	м	<0.1	mg/kg	М	<0.1	mg/kg	М
Tetryl	<1	mg/kg	М	<1	mg/kg	м	<1	mg/kg	М	<1	mg/kg	м
NG	<0.1	mg/kg	М	<0.1	mg/kg	м	<0.1	mg/kg	М	<0.1	mg/kg	М
TNT	<0.5	mg/kg	М	<0.5	mg/kg	м	<0.5	mg/kg	М	<0.5	mg/kg	М
PETN	<5	mg/kg	м	<5	mg/kg	м	<5	mg/kg	м	<5	mg/kg	м
HNS	<0.5	mg/kg	М	<0.5	mg/kg	м	<0.5	mg/kg	М	<0.5	mg/kg	М
Picrite	<0.25	mg/kg	М	<0.25	mg/kg	м	<0.25	mg/kg	М	<0.25	mg/kg	М
Picric Acid	<0.1	mg/kg	М	<0.1	mg/kg	м	<0.1	mg/kg	М	<0.1	mg/kg	М
2,4-DNT	<1	mg/kg	М	<1	mg/kg	М	<1	mg/kg	м	<1	mg/kg	М
2,6-DNT	<1	mg/kg	М	<1	mg/kg	м	<1	mg/kg	М	<1	mg/kg	М

Soil - Defence (Part 6 of 7)

Lab Code	20	0085566		20	0085567		20	0085568		20	085569	
Client Ref A	TI	P8S-002		TI	P8S-003		B	H8S-001		В	-18S-002	
Client Ref B		1.0m			1.1m		1	.0-1.5m			1.5m	
Sample Type		Soil			Soil			Soil			Soil	
Soil Type	Cla	ıy - Brown		Cla	y - Brown		Cla	ıy - Brown		Cla	y - Brown	
NC Colour	-ve		М	-ve		м	-ve		м	-ve		М
NC Colourimetric	<5000	mg/kg	М	<5000	mg/kg	М	<5000	mg/kg	М	<5000	mg/kg	М
HMX	<2	mg/kg	М	<2	mg/kg	М	<2	mg/kg	М	<2	mg/kg	М
RDX	<2	mg/kg	М	<2	mg/kg	М	<2	mg/kg	М	<2	mg/kg	М
EGDN	<0.1	mg/kg	М	<0.1	mg/kg	м	<0.1	mg/kg	м	<0.1	mg/kg	М
Tetryl	<1	mg/kg	М	<1	mg/kg	м	<1	mg/kg	м	<1	mg/kg	М
NG	<0.1	mg/kg	М	<0.1	mg/kg	м	<0.1	mg/kg	м	<0.1	mg/kg	М
TNT	<0.5	mg/kg	М	<0.5	mg/kg	М	<0.5	mg/kg	М	<0.5	mg/kg	М
PETN	<5	mg/kg	М	<5	mg/kg	М	<5	mg/kg	М	<5	mg/kg	М
HNS	<0.5	mg/kg	М	<0.5	mg/kg	м	<0.5	mg/kg	м	<0.5	mg/kg	М
Picrite	<0.25	mg/kg	М	<0.25	mg/kg	м	<0.25	mg/kg	м	<0.25	mg/kg	М
Picric Acid	<0.1	mg/kg	М	<0.1	mg/kg	м	<0.1	mg/kg	м	<0.1	mg/kg	М
2,4-DNT	<1	mg/kg	М	<1	mg/kg	м	<1	mg/kg	м	<1	mg/kg	М
2,6-DNT	<1	mg/kg	М	<1	mg/kg	М	<1	mg/kg	М	<1	mg/kg	М

Soil - Defence (Part 7 of 7)

Lab Code	20085570			20085571		20085572			
Client Ref A	HP8S-002		HP8S-003		HP8S-004				
Client Ref B		0.6m		0.8m		0-1.2m			
Sample Type		Soil		Soil		Soil			
Soil Type	Cla	Clay - Brown		Clay - Brown			Clay - Brown		
NC Colour	-ve		м	-ve		м	-ve		М
NC Colourimetric	<5000	mg/kg	м	<5000	mg/kg	м	<5000	mg/kg	М
HMX	<2	mg/kg	м	<2	mg/kg	м	<2	mg/kg	м
RDX	<2	mg/kg	м	<2	mg/kg	м	<2	mg/kg	М
EGDN	<0.1	mg/kg	м	<0.1	mg/kg	М	<0.1	mg/kg	М
Tetryl	<1	mg/kg	м	<1	mg/kg	М	<1	mg/kg	М
NG	<0.1	mg/kg	м	<0.1	mg/kg	М	<0.1	mg/kg	М
TNT	<0.5	mg/kg	м	<0.5	mg/kg	М	<0.5	mg/kg	М
PETN	<5	mg/kg	м	<5	mg/kg	М	<5	mg/kg	М
HNS	<0.5	mg/kg	м	<0.5	mg/kg	М	<0.5	mg/kg	М
Picrite	<0.25	mg/kg	м	<0.25	mg/kg	М	<0.25	mg/kg	М
Picric Acid	<0.1	mg/kg	м	<0.1	mg/kg	М	<0.1	mg/kg	М
2,4-DNT	<1	mg/kg	М	<1	mg/kg	м	<1	mg/kg	М
2,6-DNT	<1	mg/kg	м	<1	mg/kg	М	<1	mg/kg	М

COMMENTS AND DEPARTURES FROM STANDARD PROCEDURES

Lab ID Notes

There were no comments or departures from standard procedures

NOTES

- 1. This test report shall not be reproduced except in full, without written approval of the laboratory.
- 2. All results for soil samples are reported based on dry weight of soil which has been air-dried in open, shallow trays at ambient temperatures below 30°C and subsequently ground and sieved to pass through a nominal 750µm aperture sieve. In most cases, analysis is carried out directly on these prepared soils, with the following exceptions: volatile organic compounds; total and speciated phenols; free, total and complex cyanide; petrol range organic compounds; sulphide. These analyses are carried out on the soil "As received" and corrected for the known dry weight (at 105 °C) prior to reporting.
- 3. BAE Systems does not correct results for analytical recoveries.
- 4. Where provided, the value for total cresols is derived from the sum of the results for m- & p- cresol and o- cresol.
- 5. Where provided, the value for total xylenols is derived from the sum of the results for 3,4-dimethylphenol, 2,6 -dimethylphenol, 3,5-dimethylphenol, 2,3-dimethylphenol, 2,5-dimethylphenol and 2,4-dimethylphenol.
- Where provided, the value for total phenols is derived from the sum of the results for resorcinol, phenol, m- & pcresol, o- cresol, 3,4-dimethylphenol, 2,6-dimethylphenol, 3,5-dimethylphenol, 2,3-dimethylphenol, 2,5
 -dimethylphenol, 2,4-dimethylphenol, 1-naphthol, 2-isopropylphenol, 2,3,5-trimethylphenol and pentachlorophenol.
- 7. All samples were received in good condition unless otherwise stated. Results provided by the Laboratory are based on samples submitted by clients. Once submitted, samples requiring analysis are stored at below 8 °C. The Laboratory cannot be held responsible for the storage, condition or preservation of samples prior to arrival.
- 8. Validation studies indicate that the concentration of nitrocellulose in high organic content soils may be overestimated.
- 9. A value of NQ indicates that a quantitative result could not be obtained because doping trials showed that the compound was retained by the matrix.
- 10. Soil descriptions are given in order to provide a log of sample matrices submitted and are not intended as full geological descriptions.
- 11. The initials or common names used for reporting explosives relate to the following compounds: Nitrocellulose(NC); Cyclotetramethylene Tetranitramine (HMX); Cyclo-1,3,5-Trimethylene-2,4,6-Trinitramine (RDX); Ethylene Glycol Dinitrate (EGDN); 2,4,6-Trinitro-Phenylmethyl Nitramine (Tetryl); Glycerol Trinitrate (NG); 2,4,6-Trinitrotoluene (TNT); Pentaeryhritol Tetranitrate (PETN); Hexanitro-Stilbene (HNS); Nitroguanidine (Picrite); 2,4,6-Trinitro Phenol (Picric Acid); 2,4-Dinitrotoluene (2,4-DNT); 2,6-Dinitrotoluene (2,6-DNT).
- 12. * Some reporting limits may be raised due to poor recovery of internal standard or dilution of highly contaminated samples.
- 13. # Mass spectral match criteria were not fully met, possibly indicating a co-eluting peak that may inflate the result.
- 14. Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

End of Report BC0882/08

BAE Systems Property & Environmental Brisance House Euxton Lane Chorley Lancashire PR7 6AQ, England Telephone: (01257) 242000 Facsimile : (01257) 242018

TEST CERTIFICATE

Certificate No: BC0923/08

Site : JER 3	996	Ref : A0009/08			
Client :	RPS Planning and Develo	oment	Date Received :	03/09/2008	
Address :	St Anne's House		Date Completed :	12/09/2008	
	Oxford Square Oxford Street Newbury		Date Of Report :	12/09/2008	
	RG14 1JQ		Attention :	Chris Warde	
Accreditation k	<u>Key</u> : U = UKAS	M = UKAS & MCERTS	# = Subcontracted	l Tests	
T (N)					

Test Methods

Residential explosives using method ESAL/QC/4 parts a, k, n and either I or m

Approved :

Dr D.G. Malcolm Laboratory Manager



No. 1764 ESAL/DOC 81/v2

Va llalar

Mrs S. Marriott Deputy Laboratory Manager Mr M. Lattughi Senior Analyst Mr D.C. Poole Senior Analyst



Report Page 1 of 4

Soil - Defence

Lab Code	20085868			
Client Ref A	HP8S 001			
Client Ref B	0.0 - 1M			
Sample Type	Soil			
Soil Type	Clay - Brown			
NC Colour	-ve		м	
NC Colourimetric	<5000	mg/kg	М	
HMX	<2	mg/kg	м	
RDX	<2	mg/kg	м	
EGDN	<0.1	mg/kg	М	
Tetryl	<1	mg/kg	М	
NG	<0.1	mg/kg	М	
TNT	<0.5	mg/kg	М	
PETN	<5	mg/kg	М	
HNS	<0.5	mg/kg	М	
Picrite	<0.25	mg/kg	М	
Picric Acid	<0.1	mg/kg	М	
2,4-DNT	<1	mg/kg	М	
2,6-DNT	<1	mg/kg	М	

COMMENTS AND DEPARTURES FROM STANDARD PROCEDURES

Lab ID Notes

There were no comments or departures from standard procedures

NOTES

- 1. This test report shall not be reproduced except in full, without written approval of the laboratory.
- 2. All results for soil samples are reported based on dry weight of soil which has been air-dried in open, shallow trays at ambient temperatures below 30°C and subsequently ground and sieved to pass through a nominal 750µm aperture sieve. In most cases, analysis is carried out directly on these prepared soils, with the following exceptions: volatile organic compounds; total and speciated phenols; free, total and complex cyanide; petrol range organic compounds; sulphide. These analyses are carried out on the soil "As received" and corrected for the known dry weight (at 105 °C) prior to reporting.
- 3. BAE Systems does not correct results for analytical recoveries.
- 4. Where provided, the value for total cresols is derived from the sum of the results for m- & p- cresol and o- cresol.
- 5. Where provided, the value for total xylenols is derived from the sum of the results for 3,4-dimethylphenol, 2,6 -dimethylphenol, 3,5-dimethylphenol, 2,3-dimethylphenol, 2,5-dimethylphenol and 2,4-dimethylphenol.
- 6. Where provided, the value for total phenols is derived from the sum of the results for resorcinol, phenol, m- & pcresol, o- cresol, 3,4-dimethylphenol, 2,6-dimethylphenol, 3,5-dimethylphenol, 2,3-dimethylphenol, 2,5 -dimethylphenol, 2,4-dimethylphenol, 1-naphthol, 2-isopropylphenol, 2,3,5-trimethylphenol and pentachlorophenol.
- 7. All samples were received in good condition unless otherwise stated. Results provided by the Laboratory are based on samples submitted by clients. Once submitted, samples requiring analysis are stored at below 8 °C. The Laboratory cannot be held responsible for the storage, condition or preservation of samples prior to arrival.
- 8. Validation studies indicate that the concentration of nitrocellulose in high organic content soils may be overestimated.
- 9. A value of NQ indicates that a quantitative result could not be obtained because doping trials showed that the compound was retained by the matrix.
- 10. Soil descriptions are given in order to provide a log of sample matrices submitted and are not intended as full geological descriptions.
- 11. The initials or common names used for reporting explosives relate to the following compounds: Nitrocellulose(NC); Cyclotetramethylene Tetranitramine (HMX); Cyclo-1,3,5-Trimethylene-2,4,6-Trinitramine (RDX); Ethylene Glycol Dinitrate (EGDN); 2,4,6-Trinitro-Phenylmethyl Nitramine (Tetryl); Glycerol Trinitrate (NG); 2,4,6-Trinitrotoluene (TNT); Pentaeryhritol Tetranitrate (PETN); Hexanitro-Stilbene (HNS); Nitroguanidine (Picrite); 2,4,6-Trinitro Phenol (Picric Acid); 2,4-Dinitrotoluene (2,4-DNT); 2,6-Dinitrotoluene (2,6-DNT).
- 12. * Some reporting limits may be raised due to poor recovery of internal standard or dilution of highly contaminated samples.
- 13. # Mass spectral match criteria were not fully met, possibly indicating a co-eluting peak that may inflate the result.
- 14. Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

End of Report BC0923/08

Appendix E

Radiological Results – Soils



Test Report: Series RG 2194

Radiochemical Analysis of Soils

Prepared for D Cannon RPS Planning & Development September 2008



Radiochemical Analysis of Soils

Client: RPS Planning & Development Park House Greyfriars Road Cardiff CF10 3AF United Kingdom

Testing Facility: Harwell Scientifics 551 South Becquerel Avenue Harwell Science and Innovation Campus Chilton Didcot Oxon OX11 0TB

Laboratory Reference: Series RG 2194 Customer Reference: BH8F-002/D/Trit 1 /0.6/0.6 Quote Number: ENR-HAR-5172 Job Number: E915 Samples Received: 26 August 2008 Analysis Completed: 10 September 2008 Checked by:

Approved by: Approver's name: Claire Wells Job Title: Analyst Report Date: 10 September 2008



Test Report Series RG 2194: Page 1 of 6



Introduction

Please find enclosed the results for the analysis of your samples. The samples were received in good condition.

Experimental

Measurement of Gross Alpha Beta in Non-Aqueous Samples (WI/2005 Issue 10) A sample is filtered through a glass fibre paper under vacuum. Then, the filters are

screened directly for gross alpha and beta by counting on a Berthold LB770 low-level proportional counter for 500 minutes.

The Determination of Total Tritium by combustion (WI/2094 Issue 8)

A sub-sample of known weight was taken from each sample and then combusted in an oxygen rich atmosphere in the presence of a copper oxide catalyst. Under these conditions the hydrogen species were converted to water vapour. These were then selectively trapped in a series of gas-bubblers containing dilute acid. Aliquots of known weight were then assessed for their tritium content by liquid scintillation counting. The tritium activity was corrected for the proportion of the bubbler trapping solution taken and for the weight of sample combusted.



Test Report Series RG 2194: Page 2 of 6



Customer Reference	Laboratory Reference	Gross Alpha	Gross Beta	
BH8F-002/D/2/1 2/1 2	RG 2217	530 + 110	620 + 120	
BH8F-002/D/3/1 5/1 5	RG 2218	350 + 70	820 + 160	
BH8F-002/D/1/0 6/0 6	RG 2210	310 + 60	680 + 140	
BH8F-003/D/2/2/2	RG 2220	380 + 80	960 ± 190	
BH8F-003/D/3/3/3	RG 2220	470 + 100	1100 + 200	
BH8F-003/D/1/0 5/0 8	RG 2222	380 + 80	830 + 170	
BH8S-001/D/3/3/3 5	RG 2223	500 + 100	1100 + 200	
BH8S-001/D/1/0 5/1	RG 2224	670 ± 130	1000 ± 200	
BH8S-001/D/2/1/1.5	RG 2225	430 + 90	860 + 170	
BH8S-002/D/2.3/2.3	RG 2226	370 ± 80	670 ± 130	
BH8S-002/D/1.5/1.5	RG 2227	420 ± 80	690 ± 140	
HP8S-002/D/1/0.6/0.6	RG 2228	410 ± 80	730 ± 150	
HP8S-003/D/1/0.8/0.8	RG 2230	460 ± 90	750 ± 150	
HP8S-004/D/1/0.0/1.2	RG 2231	380 ± 80	630 ± 130	
TP8F-001/D/1/0.3/0.3	RG 2237	380 ± 80	590 ± 120	
TP8F-001/D/3/1.1/1.1	RG 2238	490 ± 100	1100 ± 200	
TP8F-001/D/2/0.75/0.75	RG2239	1300 ± 300	580 ± 120	
TP8F-002/D/2/0.6/0.6	RG 2240	620 ± 120	950 ± 190	
TP8F-002/D/3/0.9/0.9	RG 2241	810 ± 160	780 ± 160	
TP8F-002/D/1/0.3/0.3	RG 2242	330 ± 70	570 ± 110	
TP8F-002/D/1/0.3/0.3	RG 2242 D	380 ± 80	740 ± 150	
TP8F-003/D/1/0.3/0.3	RG 2244	330 ± 70	930 ± 190	
TP8F-003/D/3/1.15/1.15	RG 2245	420 ± 90	960 ± 190	
TP8F-003/D/2/0.6/0.6	RG 2246	430 ± 90	560 ± 110	
TP8F-004/D/2/0.9/1	RG 2247	560 ± 110	730 ± 150	
TP8F-004/D/1/0.1/0.2	RG 2248	320 ± 60	680 ± 140	
TP8F-005/D/1/0.1/0.3	RG 2249	400 ± 80	670 ± 130	
TP8F-005/D/5/3.1/3.2	RG 2250	620 ± 120	870 ± 170	
TP8F-005/D/2/0.9/1	RG 2253	410 ± 80	790 ± 160	
TP8F-006/D/2/0.1/0.3	RG 2255	690 ± 140	970 ± 200	
TP8F-006/D/3/0.5/0.9	RG 2256	360 ± 70	780 ± 160	
TP8F-006/D/4/1.2/1.4	RG 2258	670 ± 130	540 ± 110	
TP8F-006/D/6/3.1/3.2	RG 2260	420 ± 80	970 ± 190	
TP8F-007/D/1/0.1/0.2	RG 2262	280 ± 60	820 ± 160	

Results for the determination of Gross Alpha/Beta in Soils

Notes:

- Results are presented as Bq kg⁻¹ per sample as received.
 Uncertainties are quoted at 2 s.d. based on expanded uncertainties.
 'D' represents duplicate.



Test Report Series RG 2194: Page 3 of 6


Customer Reference	Laboratory Reference	Gross Alpha	Gross Beta
TP8F-007/D/2/0.5/0.6	RG 2263	390 + 80	660 + 130
TP8F-007/D/3/0.8/1	RG 2264	430 + 90	700 + 140
TP8F-008/D/2/1.1/1.1	RG 2265	510 ± 100	740 ± 150
TP8F-008/D/1/0.3/0.3	RG 2266	420 ± 80	610 ± 120
TP8F-008/D/3/1.4/1.4	RG 2267	410 ± 80	1100 ± 200
TP8F-009/D/2/0.85/0.85	RG 2269	450 ± 90	960 ± 190
TP8F-009/D/1/0.25/0.25	RG 2270	390 ± 80	920 ± 180
TP8F-009/D/3/2.5/2.5	RG 2271	370 ± 80	1300 ± 300
TP8F-010/D/2/0.7/0.8	RG 2272	320 ± 60	640 ± 130
TP8F-010/D/3/0.9/1	RG 2273	480 ± 100	1000 ± 200
TP8F-010/D/3/0.9/1	RG 2273 D	390 ± 80	1000 ± 200
TP8F-010/D/1/0.1/0.2	RG 2274	380 ± 80	780 ± 160
TP8F-011/D/2/0.8/0.9	RG 2275	700 ± 140	1200 ± 200
TP8F-011/D/3/1/1.3	RG 2276	360 ± 70	780 ± 160
TP8F-011/D/1/0.3/0.3	RG 2277	340 ± 70	500 ± 100
TP8F-012/D//1.2/1.2	RG 2278	390 ± 80	960 ± 190
TP8F-012/D//0.1/0.2	RG 2279	230 ± 50	870 ± 170
TP8F-013/D/2/0.5/1	RG 2280	400 ± 80	920 ± 180
TP8F-013/D/3/0/1.5	RG 2281	590 ± 120	930 ± 190
TP8F-013/D/1/0.3/0.3	RG 2282	570 ± 110	870 ± 170
TP8F-014/D/1/0.3/0.3	RG 2283	640 ± 130	900 ± 180
TP8F-014/D/3/1.5/1.5	RG 2284	670 ± 130	1100 ± 200
TP8F-014/D/2/0.85/0.85	RG 2285	540 ± 110	690 ± 140
TP8F-015/D/2/0.3/0.6	RG 2286	430 ± 90	850 ± 180
TP8F-015/D/1/0/0.3	RG 2287	360 ± 70	1200 ± 200
TP8F-015/D/3/1.3/1.3	RG 2288	360 ± 70	1400 ± 300
TP8F-016/D//0.2/0.4	RG 2289	400 ± 80	970 ± 190
TP8F-016/D//0.9/1.1	RG 2290	480 ± 100	870 ± 180
TP8S-004/D/1/0.6/0.6	RG 2291	500 ± 100	940 ± 190
TP8S-004/D/3/1.4/1.4	RG 2292	700 ± 140	1100 ± 200
TP8S-004/D/2/0.9/0.9	RG 2293	460 ± 90	900 ± 180
TP8S-001/D/3/3/3	RG 2294	530 ± 110	940 ± 190
TP8S-001/D/1/0.9/0.9	RG 2295	660 ± 130	1000 ± 200
TP8S-001/D/2/1.1/1.1	RG 2296	360 ± 70	840 ± 170

Results for the determination of Gross Alpha/Beta in Soils

- Notes:

 Results are presented as Bq kg⁻¹ per sample as received.
 Uncertainties are quoted at 2 s.d. based on expanded uncertainties.
 'D' represents duplicate.



Test Report Series RG 2194: Page 4 of 6



Results for the determination of Gross Alpha/Beta in Soils

Customer	Laboratory	Gross Alpha	Gross Bota	
Reference	Reference	GIUSS Alpha	GIUSS Dela	
TP8S-002/D/2/1/1	RG 2297	530 ± 110	560 ± 110	
TP8S-002/D/1/0.9/0.9	RG 2298	360 ± 70	740 ± 150	
TP8S-002/D/3/3/3	RG 2299	400 ± 80	970 ± 190	
TP8S-003/D/2/1.1/1.1	RG 2300	480 ± 100	960 ± 190	
TP8S-003/D/1/0.8/0.8	RG 2301	400 ± 80	950 ± 190	
TP8S-003/D/3/3/3	RG 2302	480 ± 100	1000 ± 200	
BH85-002/0.8m	RG 2303	670 ± 130	990 ± 200	
BH85-002/0.8m	RG 2303 D	610 ± 120	1100 ± 200	

Notes:

- Results are presented as Bq kg⁻¹ per sample as received.
 Uncertainties are quoted at 2 s.d. based on expanded uncertainties.
 'D' represents duplicate.



Test Report Series RG 2194: Page 5 of 6



Customer Reference	Laboratory Reference	Tritium
BH8F-002/D/Trit 1/0.6/0.6	RG 2194	< 50
BH8F-003/D/Trit 1/0.5/0.8	RG 2195	< 50
BH8S-001/D/Trit 1/0.5/1	RG 2197	68 ± 5
HP8S-002/D/Trit 1/0.6/0.6	RG 2198	< 50
HP8S-004/D/Trit 1/0/1.2	RG 2200	< 50
TP8F-001/D/Trit 1/0.3/0.3	RG 2201	< 50
TP8F-002/D/Trit 1/0.3/0.3	RG 2202	< 50
TP8F-004/D/Trit 1/0.2/0.5	RG 2203	< 50
TP8F-005/D/Trit 1/0.1/0.3	RG 2204	< 50
TP8F-008/D/Trit 1/0.3/0.3	RG 2205	< 50
TP8F-010/D/Trit 1/0.1/0.2	RG 2206	< 50
TP8F-012/D/Trit 1/0.1/0.2	RG 2208	< 50
TP8F-015/D/Trit 1/0/0.3	RG 2211	< 50
TP8S-004/D/Trit 1/0.6/0.6	RG 2213	< 50
TP8S-002/D/Trit 1/0.9/0.9	RG 2215	< 50

Results for the determination of Tritium in Soils

Notes:

- Results are presented in Bq kg⁻¹ for samples as received.
 Uncertainties are quoted at 2SD based on expanded uncertainties.
 LoD for tritium is 50 Bq kg⁻¹.



Test Report Series RG 2194: Page 6 of 6



Test Report: Series RG 2379

Analysis of Gross Alpha/Beta in Soil

Prepared for G Moore RPS Planning and Development Ltd September 2008



Analysis of Gross Alpha/Beta in Soil

Client: RPS Planning and Development Ltd Park House Greyfriars Road Cardiff CF10 3AF United Kingdom

Testing Facility: Harwell Scientifics 551 South Becquerel Avenue Harwell Science and Innovation Campus Chilton Didcot Oxon OX11 0TB

Laboratory Reference:	Series RG 2379
Customer Reference:	BH8F-001 0.0m-0.5m Tub
Quote Number:	ENR-HAR-5172
Job Number:	E915
Samples Received:	03 September 08
Analysis Completed:	11 September 08
Checked by:	
Approved by:	

Approver's name: Claire Wells Job Title: Analyst Report Date: 11 September 08



Test Report Series RG 2379: Page 1 of 2



Introduction

Please find enclosed the results for the analysis of your samples. The samples were received in good condition.

Experimental

Gross Alpha / Beta in Soils (WI/2005 Issue 10)

An aliquot of the powdered sample was suspended in methanol and then filtered through a glass fibre filter paper under vacuum. After air drying, the sample was weighed and counted on a Berthold LB770 low-level proportional counter for 500 minutes. This method provides minimum detectable concentrations of 0.1 Bq g⁻¹ for both gross alpha and gross beta. Only 0.25g of sample is used in the analysis, which is not always a true representation of the whole sample if a large quantity is supplied. The small sample size means that differences in duplicate results can be due to non-homogeneity of the sample.

Customer Reference	Laboratory Reference	Gross Alpha	Gross Beta
BH8F-001 0.0m-0.5m Tub	RG 2379	530 ± 110	820 ± 160
BH8F-001 0.5m-1.0m Tub	RG 2380	370 ± 80	730 ± 150
BH8F-001 2.0m-2.5m Tub	RG 2381	430 ± 90	910 ± 180
HP8S-004 0.5m-1.0m Tub	RG 2382	310 ± 60	970 ± 190

Results for the Analysis of Gross Alpha/Beta in Soil

Notes:

- 1. Results are presented as Bq per kg^{-1} of sample as received.
- 2. Uncertainties are quoted at 2 s.d. based on expanded uncertainties.



Test Report Series RG 2379: Page 2 of 2



Test Report: Series RG 2441

Radiochemical Analysis of Soils

Graham Moore RPS Planning & Development November 2008



Radiochemical Analysis of Soils

Client: RPS Planning & Development Park House Greyfriars Road Cardiff CF10 3AF United Kingdom

Testing Facility: Harwell Scientifics 551 South Becquerel Avenue Harwell Science and Innovation Campus Chilton Didcot Oxon OX11 0TB

Laboratory Reference:	Series RG 2441
Customer Reference:	BH8F-003
Quote Number:	ENR-HAR-5172
Job Number:	E915
Samples Received:	10 September 2008
Analysis Completed:	17 November 2008
Checked by:	

Approved by: Approver's name: Garry Prior Job Title: Principal Analyst Interim Report Date: 17 November 2008



Test Report Series RG 2441: Page 1 of 6



Introduction

Please find enclosed the results for the analysis of your samples. The samples were received in good condition.

Experimental

Radioactivity Analysis by Gamma Ray Spectrometry (WI/2029 Issue 7)

The measurement technique is based on the use of germanium detectors coupled to a computerized analytical system. The detectors are calibrated for efficiency using a mixed radionuclide standard, which covers an energy range of approximately 120-2000 keV. Efficiencies at lower energies are determined on an individual basis. Stored spectra are analysed using the software FITZPEAKS for photopeak identification and subsequent quantification.

Plutonium-238, 239+240 in Soils and Vegetation (WI/2117 Issue 3)

The appropriate internal yield tracers are added to a dried and ground aliquot of the sample and ashed in a furnace overnight. The sample is then digested in aqua regia. After co-precipitation of the nuclides of interest with iron, Ion-exchange chromatography is used to further purify and separate the americium and plutonium, which is then electrodeposited onto stainless-steel discs. Measurement of the americium and plutonium isotopes is carried out by alpha-spectrometry.

Uranium-234, 235 & 238 in Soils by alpha spectrometry (WI/2123 Issue 5)

The samples were digested in acids. After co-precipitation of the nuclides of interest with iron hydroxide, ion-exchange chromatography was used to further purify and separate the uranium, which was then electrodeposited onto stainless-steel discs. Measurement of the uranium isotopes was carried out by alpha-spectrometry.

Polonium-210 by Wet Oxidation (WI/2082 Issue 5)

Polonium-208 was added to the sample as an internal tracer, and then co precipitated with ferric hydroxide. The polonium in the sample was converted to the chloride form by treating with hydrochloric acid. The solution was then spontaneously deposited on a silver disc. This silver disc was measured by alpha spectrometry to determine the ratio of Po-210 to Po-208.

Measurement of Thorium isotopes in Soils and Vegetation (WI/2112 Issue 4)

An aliquot of the homogenized sample was spiked with a thorium-229 internal standard and then ashed at 450 °C. The ashed residue was dissolved in hydrofluoric acids. Thorium was concentrated by co-precipitation with iron (III) hydroxide. Following dissolution of the precipitate using mineral acid, the thorium was purified using ion-exchange chromatography. The purified thorium was electrodeposited onto a stainless-steel disc, the disc was measured by alpha spectrometry.



Test Report Series RG 2441: Page 2 of 6



Customer Reference	Laboratory Reference	²³⁹⁺²⁴⁰ Pu	²³⁸ Pu
TP8F-001 0.75	RG 2444	< 0.7	< 1
TP8F-002 0.90	RG 2445	< 0.4	< 2
TP8F-011 0.80	RG 2448	< 0.4	< 0.8
TP8F-014 1.50	RG 2449	< 0.3	< 1
TP8S-004 1.40	RG 2452	< 0.6	< 2

Results for the determination of Plutonium in soil

Notes:

Results are presented as Bq kg⁻¹ per sample as received.
 Uncertainties are quoted at 2 SD based on expanded uncertainties.

Results for the determination of Uranium in soil

Customer Reference	Laboratory Reference	²³⁸ U	²³⁵ U	²³⁴ U
TP8F-001 0.75	RG 2444	18 ± 2	14 ± 2	480 ± 30
TP8F-002 0.90	RG 2445	29 ± 3	6.9 ± 1.4	240 ± 10
TP8F-011 0.80	RG 2448	21 ± 2	3.2 ± 0.8	85 ± 6
TP8F-014 1.50	RG 2449	27 ± 3	< 2	41 ± 4
TP8S-004 1.40	RG 2452	28 ± 3	< 3	45 ± 4

Notes:

Results are presented as Bq kg⁻¹ per sample as received.
 Uncertainties are quoted at 2 SD based on expanded uncertainties.

Results for the determination of Thorium in soil

Customer Reference	Laboratory ²²⁸ Th Reference		²³⁰ Th	²³² Th	
TP8F-001 0.75	RG 2444	17 ± 2	9.2 ± 1.6	19 ± 3	
TP8F-002 0.90	RG 2445	32 ± 4	4.8 ± 1.3	34 ± 4	
TP8F-011 0.80	RG 2448	32 ± 4	30 ± 4	35 ± 5	
TP8F-014 1.50	RG 2449	41 ± 5	32 ± 5	49 ± 6	
TP8S-004 1.40	RG 2452	39 ± 5	33 ± 4	43 ± 5	

Notes:

1. Results are presented as Bq kg⁻¹ per sample as received.

2. Uncertainties are quoted at 2 SD based on expanded uncertainties.

Test Report Series RG 2441: Page 3 of 6





Customer Reference	Laboratory Reference	²¹⁰ Po
TP8F-001 0.75	RG 2444	12 ± 3
TP8F-002 0.90	RG 2445	24 ± 5
TP8F-011 0.80	RG 2448	26 ± 6
TP8F-014 1.50	RG 2449	21 ± 5
TP8S-004 1.40	RG 2452	26 ± 5

Results for the determination of Polonium in soil

Notes:

- Results are presented as Bq kg⁻¹ per sample as received.
 Uncertainties are quoted at 2 SD based on expanded uncertainties.



Test Report Series RG 2441: Page 4 of 6



Customer Reference	Laboratory Reference	K-40	Mn-54	Co-60	Zn-65	Zr-95	Cs-134	Cs-137	Eu-152	TI-208	Pb-210
BH8F-003 3.00	RG 2441	880 ± 50	< 0.8	< 2	< 2	< 2	< 0.7	< 2	< 2	16 ± 2	< 60
BH8S-001 3.00	RG 2442	820 ± 50	< 0.8	< 0.9	< 3	< 3	< 0.7	< 2	< 2	16 ± 2	< 60
TP8F-001 1.10	RG 2443	850 ± 50	< 0.8	< 1	< 2	< 2	< 0.7	< 2	< 2	18 ± 2	< 60
TP8F-008 1.40	RG 2446	350 ± 30	< 0.7	< 0.8	< 2	< 2	< 0.6	< 2	< 1	5.5 ± 1.0	< 40
TP8F-009 2.50	RG 2447	850 ± 50	< 2	< 0.9	< 3	< 3	< 0.7	< 2	< 2	16 ± 2	< 50
TP8F-011 0.80	RG 2448	810 ± 50	< 0.8	< 0.9	< 2	< 2	< 0.8	< 2	< 2	15 ± 2	< 60
TP8F-014 1.50	RG 2449	760 ± 50	< 0.8	< 0.9	< 2	< 2	< 0.7	< 0.9	< 2	15 ± 2	< 60
TP8F-015 0.00	RG 2450	$430~\pm40$	< 0.9	< 1	< 2	< 2	< 0.8	< 4	< 2	11 ± 2	< 70
TP8F-015 1.30	RG 2451	730 ± 50	< 0.8	< 0.9	< 2	< 2	< 0.7	< 2	< 1	15 ± 2	< 60
TP8S-004 1.40	RG 2452	780 ± 70	< 1	< 2	< 2	< 2	< 2	< 2	< 2	16 ± 2	< 50
BH8S-002 0.80	RG 2453	530 ± 60	< 2	< 3	< 3	< 3	< 2	< 3	< 4	10 ± 3	< 200

Gamma Spectrometry Results for Soil Samples

Notes:

- 1. Results are presented as Bq kg⁻¹ sample as received.
- 2. Detector calibrations are based upon homogeneous standard solutions. For quantification purposes the samples are assumed to be homogeneous.
- 3. Results marked with a † are not UKAS accredited.
- 4. Due to the peaks for both ²²⁶Ra and ²³⁵U being at approximately 185keV, individual results cannot be accurately determined by the software. Therefore, please note that these results are guideline figures only, and if an accurate result for either nuclide is required this is better obtained by radiochemical analysis.
- 5. Results above LoD are reported to 2 significant figures.
- 6. Uncertainties are quoted at 2SD based on expanded uncertainties.



Test Report Series RG 2441: Page 5 of 6



Customer Reference	Laboratory Reference	Pb-212	Bi-212	Pb-214	Bi-214	[†] Ra-226	Ac-228	Th-234	[†] U-235	Am-241
BH8F-003 3.00	RG 2441	46 ± 3	65 ± 16	24 ± 3	21 ± 4	< 70	$48~\pm6$	< 90	< 10	< 2
BH8S-001 3.00	RG 2442	44 ± 3	48 ± 15	25 ± 3	23 ± 4	61 ± 20	$47~\pm 6$	< 90	< 7	< 2
TP8F-001 1.10	RG 2443	48 ± 3	60 ± 15	23 ± 3	22 ± 4	< 80	$48~\pm6$	< 70	< 20	< 2
TP8F-008 1.40	RG 2446	16 ± 2	< 20	13 ± 2	< 6	< 40	18 ± 4	< 50	< 8	< 2
TP8F-009 2.50	RG 2447	46 ± 3	59 ± 16	25 ± 3	23 ± 4	< 70	$47~\pm 6$	< 70	< 9	< 3
TP8F-011 0.80	RG 2448	42 ± 3	50 ± 14	28 ± 3	25 ± 4	< 60	38 ± 5	< 70	< 20	< 2
TP8F-014 1.50	RG 2449	43 ± 3	48 ± 15	26 ± 3	26 ± 4	< 80	$44~\pm 6$	< 40	< 20	< 2
TP8F-015 0.00	RG 2450	30 ± 3	< 30	24 ± 3	< 8	< 60	32 ± 6	< 80	< 20	< 3
TP8F-015 1.30	RG 2451	43 ± 3	50 ± 15	23 ± 3	24 ± 4	< 60	41 ± 5	< 70	< 7	< 2
TP8S-004 1.40	RG 2452	44 ± 4	< 60	27 ± 3	< 30	< 70	49 ±7	< 80	< 7	< 3
BH8S-002 0.80	RG 2453	30 ± 5	< 70	< 30	< 30	< 70	< 40	< 200	< 20	< 5

Gamma Spectrometry Results for Soil Samples

Notes:

- 1. Results are presented as Bq kg⁻¹ sample as received.
- 2. Detector calibrations are based upon homogeneous standard solutions. For quantification purposes the samples are assumed to be homogeneous.
- Results marked with a † are not UKAS accredited.
 Due to the peaks for both ²²⁶Ra and ²³⁵U being at approximately 185keV, individual results cannot be accurately determined by the software. Therefore, please note that these results are guideline figures only, and if an accurate result for either nuclide is required this is better obtained by radiochemical analysis.
- 5. Results above LoD are reported to 2 significant figures.
- 6. Uncertainties are quoted at 2SD based on expanded uncertainties.

Test Report Series RG 2441: Page 6 of 6



Appendix F

Chemical Results – Soils



TEST REPORT SOIL SAMPLE ANALYSIS



TES Report No. EFS/085458M (Ver. 2)

RPS Group Plc St Annes House Oxford Square Oxford Street Newbury

Site: Awe Burghfield

The 20 samples described in this report were logged for analysis by TES Bretby on 27-Aug-2008. The analysis was completed by: 18-Sep-2008

Tests where the accreditation is set to N or No, and any individual data items marked with a * are not UKAS or MCERTS accredited Any opinions or interpretations expressed herein are outside the scope of any UKAS accreditation held by TES Bretby Laboratories.

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 3) Table of PAH (MS-SIM) (80) Results (Pages 4 to 23) Table of PCB Congener Results (Page 24) Table of SVOC Results (Pages 25 to 27) Table of TPH (Si) banding (std) (Page 28) GC-FID Chromatograms (Pages 29 to 68) Table of VOC Results (Pages 69 to 71) Table of Report Notes (Page 72)

On behalf of TES Bretby : J Hannah

J. Hannah Project Co-ordinator

Date of Issue: 18-Sep-2008

Accreditation Codes: **N** (Not Accredited), **U** (UKAS), **UM** (UKAS & MCERTS) Tests marked '^' have been subcontracted to another laboratory. (NVM) - denotes the sample matrix is dissimilar to matrices upon which the MCERTS validation was based, and is therefore not accredited for MCERTS. All results are reported on a dry weight basis at 105°C unless otherwise stated. (except QC samples) TES Bretby accepts no responsibility for any sampling not carried out by our personnel.

Sample Descriptions

Client : RPS Consultants

Site : Awe Burghfield

Report Number : S08_5458M

Lab ID Number	Client ID	Description
CL/0825197	TP8F-007 0.0-0.6	Brown Stone CLAY
CL/0825198	TP8F-016 0.2-0.4	Brown CLAY
CL/0825199	TP8F-005 0.1-0.3	Brown Stone CLAY
CL/0825200	TP8F-006 0.1-0.3	Brown Stone CLAY
CL/0825201	TP8F-010 0.0-0.8	Brown MADE GROUND
CL/0825202	BH8F-002 0.6	Brown Stone SILT
CL/0825203	BH8F-003 0.5-0.8	Brown Stone CLAY
CL/0825204	TP8F-013 0.5-1.0	Brown Stone CLAY
CL/0825205	TP8F-001 0.75	Brown CLAY
CL/0825206	TP8F-003 0.6	Brown Stone CLAY
CL/0825207	TP8F-008 1.1	Brown Stone CLAY
CL/0825208	TP8F-002 0.6	Brown Stone CLAY
CL/0825209	TP8F-009 0.85	Brown Stone CLAY
CL/0825210	TP8F-004 0.0-1.0	Brown Stone CLAY
CL/0825211	TP8F-007 0.0-1.0	Brown MADE GROUND
CL/0825212	TP8F-011 0.0-0.9	Brown CLAY
CL/0825213	TP8F-012 0.0-0.7	Brown CLAY
CL/0825214	TP8F-012 1.2	Brown CLAY
CL/0825215	TP8S-004 0.9	Brown CLAY
CL/0825216	TP8F-014 0.85	Brown Stone CLAY

	Units : Method Codes :	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	% TMSS	mg/kg	ug/kg	pH Units	
	Method Reporting Limits :	20	2	0.1	3	3	3.5	0.10	2.5	0.5	2.0	19.5	0.2	10.0	5	VV OLIVIS	
	Accreditation Code:	UM	UM	U	UM	UM	UM	U	UM	U	U	UM	U			U	
TES ID Number CL/	Client Sample Description	SO4 (acid sol)	Arsenic (MS)	Cadmium (MS)	Chromium (MS)	Copper (MS)	Lead (MS)	Mercury (MS)	Nickel (MS)	Selenium (MS)	Vanadium (MS)	Zinc (MS)	Tot.Moisture @ 105C	TPH by GCFID (AR/Si)	VOC by GCMS (8100)	pH units	
0825202	BH8F-002 0.6	338	7.6	<0.1	15.8‡	10.5	23	0.14	11.4	<0.5	28.4	42.5	19.8	Req		8.0	
0825203	BH8F-003 0.5-0.8	375	9.5	0.17	36‡	18.9	15.6	<0.1	33.6	<0.5	58.8	56.1	18.8	Req		7.9	
0825205	TP8F-001 0.75	78	14.1	0.14	42.9‡	20.5	16.4	<0.1	35.7	0.6	67.3	75.4	22.5	Req		7.8	
0825208	TP8F-002 0.6	36	11.3	<0.1	22.1‡	7.8	10.6	<0.1	12	<0.5	40.1	29.1	15.3	Req		7.9	
0825206	TP8F-003 0.6	74	9.4	<0.1	18.1‡	6.5	10.5	<0.1	11.2	<0.5	35	31.3	15.6	Req		7.8	
0825210	TP8F-004 0.0-1.0	216	7.7	<0.1	20.7‡	12.1	20.7	<0.1	16.6	<0.6	33.5	47.9	34.5	Req		8.1	
0825199	TP8F-005 0.1-0.3	422	9.9	0.2	29.4‡	15.2	45.8	0.1	20	0.8	48	68	22.8	Req		7.6	
0825200	TP8F-006 0.1-0.3	262	12.2	0.17	37‡	21.7	31.8	0.1	34.1	0.9	59.1	81.9	23.0	Req		7.6	
0825197	TP8F-007 0.0-0.6	462	10.3	0.2	21.2‡	18.6	56	0.15	17.8	0.6	38.3	131	25.1	Req		7.5	
0825211	TP8F-007 0.0-1.0	363	9.9	0.17	23.6‡	21.4	79.4	0.17	16.2	0.5	36.3	84.9	23.6	Req		7.7	
0825207	TP8F-008 1.1	24	12.9	0.12	20.2‡	14.1	10.8	<0.1	21.2	<0.5	39.7	35	16.8	Req		7.2	
0825209	TP8F-009 0.85	30	11.4	<0.1	31.0‡	13.5	13.6	<0.1	16	<0.6	49.4	45.2	22.4	Req	Req	7.1	
0825201	TP8F-010 0.0-0.8	397	9.6	0.1	17.3‡	12.9	30.9	<0.1	15.2	<0.5	32.7	45	20.5	Req		8.0	
0825212	TP8F-011 0.0-0.9	661	11.2	0.18	34.9‡	19.4	15.5	<0.1	36.9	1	58.9	55.4	24.0	Req		8.2	
0825213	TP8F-012 0.0-0.7	1690	12.1	0.23	31.9‡	24.3	41.9	0.14	26.9	<0.7	52.6	83.9	35.6	Req	Req	7.6	
0825214	TP8F-012 1.2	140	9.8	0.11	38.3‡	24.7	17.2	<0.1	34.4	0.9	56.3	70.9	23.1	Req	Req	8.2	
0825204	TP8F-013 0.5-1.0	183	11.3	0.14	24.6‡	18.6	25.4	<0.1	22.2	<0.5	42.4	60.3	18.9	Req		8.1	
0825216	TP8F-014 0.85	38	19.3	<0.1	24.1‡	12.8	12.6	<0.1	17.5	0.6	46.4	38.1	21.2	Req		7.7	
0825198	TP8F-016 0.2-0.4	121	11.4	0.12	37.0‡	24	20.3	0.11	33.3	<0.5	57	73	20.8	Req		8.2	
0825215	TP8S-004 0.9	193	11.1	<0.1	32‡	18.2	14	<0.1	33.2	<0.5	49.4	58.3	22.4	Req		8.2	
	TES Bretby PO Box 100, Bretby Business Park,	Client N Contact	ame	RPS Co	onsultant ore	S					9	Soils Sa	ample /	Analysi	S	TE	S
	Burton-on-Trent, Staffordshire, DE15 0XD Date Printed 18-Sep-08 Tel +44 (0) 1283 554400 Report Number EFS/085458M Fax +44 (0) 1283 554422 Table Number 1					Bre	tby										

	Units :	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	ug/kg		mg/kg	mg/kg	% M/M	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
	Method Codes :	ICPBOR		ICPMAJ 1	KONECL	PAHMSUS	PCBUSECD	SEN9	SFAS	SVOCMSUS	S WSLM59	PHEHPLC	PHEHPLC	PHEHPLC	PHEHPLC	PHEHPLC	
	Accreditation Code:	0.5 N	N	N	5.0 N	0.00	5	N	0.5 N	0.2-10.0	0.02 N	U.3	U.3	0.3 U	U.3	U.3	
TES ID Number CL/	Client Sample Description	Boron (H20 Soluble)	Barium	Beryllium	Chloride:	PAH by MS.17(0.08)	PCB (7 Congeners)	Asbestos (screening)	Sulphide as S (AR)	SVOC (AR)	F.O.C. %	Phenol	Cresols	Xylenols	Trimethylphenols	Total Phenols	
0825202	BH8F-002 0.6	<0.5	<0.01	<0.01	50	Req		NBFO	<0.6		1.67						
0825203	BH8F-003 0.5-0.8	<0.5	4.9	0.22	23	Req		NBFO	<0.6		0.43						
0825205	TP8F-001 0.75	<0.5	19.7	0.8	49	Req		NBFO	<0.6		0.3						
0825208	TP8F-002 0.6	<0.5	<0.01	<0.01	23	Req		NBFO	<0.6		0.29						
0825206	TP8F-003 0.6	<0.5	<0.01	<0.01	21	Req		NBFO	<0.6		0.39						
0825210	TP8F-004 0.0-1.0	<0.6	8	<0.01	26	Req		NBFO	<0.8		1.36						
0825199	TP8F-005 0.1-0.3	<0.5	239.5	<0.01	37	Req		NBFO	<0.6		1.9						
0825200	TP8F-006 0.1-0.3	<0.5	21.2	0.09	28	Req		NBFO	<0.6		1.18						
0825197	TP8F-007 0.0-0.6	0.9	27.4	<0.01	774	Req		NBFO	<0.7		2.72						
0825211	TP8F-007 0.0-1.0	0.9	46	<0.01	25	Req		NBFO	<0.7		2.09						
0825207	TP8F-008 1.1	<0.5	<0.01	0.04	9.2	Req		NBFO	<0.6		0.18						
0825209	TP8F-009 0.85	<0.6	<0.01	<0.01	12.3	Req		NBFO	<0.6	Req	0.27						
0825201	TP8F-010 0.0-0.8	<0.5	<0.01	<0.01	38	Req		NBFO	<0.6		1.67						
0825212	TP8F-011 0.0-0.9	<0.6	2.7	0.33	43	Req		NBFO	<0.7		0.56						
0825213	TP8F-012 0.0-0.7	3.6	2	<0.01	81	Req	Req	NBFO	44.6	Req	3.14	<0.5	<0.5	<0.5	<0.5	<1.9	
0825214	TP8F-012 1.2	<0.5	<0.01	0.3	19	Req	Req	NBFO	<0.7	Req	0.38	<0.4	<0.4	<0.4	<0.4	<1.6	
0825204	TP8F-013 0.5-1.0	<0.5	2	<0.01	41	Req		NBFO	<0.6		0.91						
0825216	TP8F-014 0.85	<0.6	<0.01	0.05	23	Req		NBFO	<0.6		0.34						
0825198	TP8F-016 0.2-0.4	0.6	13.6	0.13	27	Req		NBFO	<0.6		0.46						
0825215	TP8S-004 0.9	<0.5	<0.01	<0.01	18	Req		NBFO	<0.6		0.5						
TES Bretby PO Box 100, Bretby Business Park,		Client N Contact	ame	RPS Co	onsultant ore	S					S	Soils Sa	ample /	Analysi	5	TE	S
Burton-on-Trent, Staffordshire, DE15 0XD Tel +44 (0) 1283 554400 Fax +44 (0) 1283 554422 Date Printed Report Number Table Number					EF	18-Sep-08 6/085458M 1	Bretby										

Customer and Site Details:
Sample Details:
LIMS ID Number:
QC Batch Number:
Quantitation File:
Directory:
Dilution:

RPS Consultants: Awe BurghfieldTP8F-007 0.0-0.6Job NCL0825197Date E3127Date EInitial CalibrationDate A905PAH.MS10\Matrix1.0Ext Matrix

Job Number: Date Booked in: Date Extracted: Date Analysed: Matrix: Ext Method:

S08_5458M 27-Aug-08 02-Sep-08 06-Sep-08 Soil Ultrasonic

Accredited?: No

Target Compounds	CAS #	R.T.	Concentration	% Fit	Accr.
		(min)	mg/kg		code
Naphthalene	91-20-3	-	< 0.11	-	Ν
Acenaphthylene	208-96-8	-	< 0.11	-	Ν
Acenaphthene	83-32-9	-	< 0.11	-	Ν
Fluorene	86-73-7	-	< 0.11	-	Ν
Phenanthrene	85-01-8	5.40	0.25	87	Ν
Anthracene	120-12-7	5.46	0.15	86	Ν
Fluoranthene	206-44-0	7.06	0.73	94	Ν
Pyrene	129-00-0	7.36	0.60	99	Ν
Benzo[a]anthracene	56-55-3	9.20	0.36	90	Ν
Chrysene	218-01-9	9.26	0.40	96	Ν
Benzo[b]fluoranthene	205-99-2	10.77	0.29	98	Ν
Benzo[k]fluoranthene	207-08-9	10.79	0.33	94	Ν
Benzo[a]pyrene	50-32-8	11.18	0.40	94	Ν
Indeno[1,2,3-cd]pyrene	193-39-5	12.55	0.25	95	Ν
Dibenzo[a,h]anthracene	53-70-3	-	< 0.11	-	Ν
Benzo[g,h,i]perylene	191-24-2	12.82	0.20	94	Ν
Coronene	191-07-1	-	< 0.11	-	N
Total (USEPA16) PAHs	-	-	< 4.51	-	Ν

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	109
Acenaphthene-d10	124
Phenanthrene-d10	124
Chrysene-d12	123
Perylene-d12	124

Surrogates	% Rec
Nitrobenzene-d5	N.D
2-Fluorobiphenyl	93
Terphenyl-d14	98

Concentrations are reported on a dry weight basis.

Customer and Site De	tails:
Sample Details:	
LIMS ID Number:	
QC Batch Number:	
Quantitation File:	
Directory:	
Dilution:	

RPS Consultants: Awe BurghfieldTP8F-016 0.2-0.4Job NCL0825198Date E3127Date EInitial CalibrationDate A905PAH.MS10\Matrix1.0Ext Matrix

Job Number: 5 Date Booked in: 2 Date Extracted: 6 Date Analysed: 6 Matrix: 5 Ext Method: 6

S08_5458M 27-Aug-08 02-Sep-08 06-Sep-08 Soil Ultrasonic

Accredited?: No

Target Compounds	CAS #	R.T.	Concentration	% Fit	Accr.
		(min)	mg/kg		code
Naphthalene	91-20-3	-	< 0.10	-	Ν
Acenaphthylene	208-96-8	-	< 0.10	-	Ν
Acenaphthene	83-32-9	-	< 0.10	-	Ν
Fluorene	86-73-7	-	< 0.10	-	Ν
Phenanthrene	85-01-8	-	< 0.10	-	Ν
Anthracene	120-12-7	-	< 0.10	-	Ν
Fluoranthene	206-44-0	-	< 0.10	-	Ν
Pyrene	129-00-0	-	< 0.10	-	Ν
Benzo[a]anthracene	56-55-3	-	< 0.10	-	Ν
Chrysene	218-01-9	-	< 0.10	-	Ν
Benzo[b]fluoranthene	205-99-2	-	< 0.10	-	Ν
Benzo[k]fluoranthene	207-08-9	-	< 0.10	-	Ν
Benzo[a]pyrene	50-32-8	-	< 0.10	-	Ν
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.10	-	Ν
Dibenzo[a,h]anthracene	53-70-3	-	< 0.10	-	Ν
Benzo[g,h,i]perylene	191-24-2	-	< 0.10	-	Ν
Coronene	191-07-1	-	< 0.10	-	N
Total (USEPA16) PAHs	-	-	< 1.62	-	N

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	105
Acenaphthene-d10	120
Phenanthrene-d10	120
Chrysene-d12	116
Perylene-d12	116

Surrogates	% Rec
Nitrobenzene-d5	N.D
2-Fluorobiphenyl	93
Terphenyl-d14	99

Concentrations are reported on a dry weight basis.

Customer and Site Details:
Sample Details:
LIMS ID Number:
QC Batch Number:
Quantitation File:
Directory:
Dilution:

RPS Consultants: Awe BurghfieldTP8F-005 0.1-0.3Job NCL0825199Date E3127Date EInitial CalibrationDate A905PAH.MS10\Matrix1.0Ext Matrix

Job Number:SJob Number:SDate Booked in:2Date Extracted:0Date Analysed:0Matrix:SExt Method:L

S08_5458M 27-Aug-08 02-Sep-08 06-Sep-08 Soil Ultrasonic

Accredited?: No

Target Compounds	CAS #	R.T.	Concentration	% Fit	Accr.
		(min)	mg/kg		code
Naphthalene	91-20-3	-	< 0.10	-	N
Acenaphthylene	208-96-8	-	< 0.10	-	Ν
Acenaphthene	83-32-9	-	< 0.10	-	Ν
Fluorene	86-73-7	-	< 0.10	-	Ν
Phenanthrene	85-01-8	-	< 0.10	-	Ν
Anthracene	120-12-7	-	< 0.10	-	Ν
Fluoranthene	206-44-0	7.06	0.10	89	Ν
Pyrene	129-00-0	7.36	0.12	95	Ν
Benzo[a]anthracene	56-55-3	-	< 0.10	-	Ν
Chrysene	218-01-9	9.26	0.12	93	Ν
Benzo[b]fluoranthene	205-99-2	-	< 0.10	-	Ν
Benzo[k]fluoranthene	207-08-9	10.78	0.12	97	Ν
Benzo[a]pyrene	50-32-8	11.18	0.12	94	Ν
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.10	-	Ν
Dibenzo[a,h]anthracene	53-70-3	-	< 0.10	-	Ν
Benzo[g,h,i]perylene	191-24-2	-	< 0.10	-	Ν
Coronene	191-07-1	-	< 0.10	-	N
Total (USEPA16) PAHs	-	-	< 1.74	-	N

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	88
Acenaphthene-d10	115
Phenanthrene-d10	114
Chrysene-d12	109
Perylene-d12	108

Surrogates	% Rec
Nitrobenzene-d5	N.D
2-Fluorobiphenyl	94
Terphenyl-d14	102

Concentrations are reported on a dry weight basis.

Customer and Site Details:
Sample Details:
LIMS ID Number:
QC Batch Number:
Quantitation File:
Directory:
Dilution:

RPS Consultants: Awe BurghfieldTP8F-006 0.1-0.3Job NCL0825200Date E3127Date EInitial CalibrationDate A905PAH.MS10\Matrix1.0Ext Matrix

Job Number: S(Date Booked in: 27 Date Extracted: 02 Date Analysed: 06 Matrix: S(Ext Method: UI

S08_5458M 27-Aug-08 02-Sep-08 06-Sep-08 Soil Ultrasonic

Accredited?: No

Target Compounds	CAS #	R.T.	Concentration	% Fit	Accr.
		(min)	mg/kg		code
Naphthalene	91-20-3	-	< 0.10	-	Ν
Acenaphthylene	208-96-8	-	< 0.10	-	Ν
Acenaphthene	83-32-9	-	< 0.10	-	Ν
Fluorene	86-73-7	-	< 0.10	-	Ν
Phenanthrene	85-01-8	-	< 0.10	-	Ν
Anthracene	120-12-7	-	< 0.10	-	Ν
Fluoranthene	206-44-0	-	< 0.10	-	Ν
Pyrene	129-00-0	-	< 0.10	-	Ν
Benzo[a]anthracene	56-55-3	-	< 0.10	-	Ν
Chrysene	218-01-9	-	< 0.10	-	Ν
Benzo[b]fluoranthene	205-99-2	-	< 0.10	-	Ν
Benzo[k]fluoranthene	207-08-9	-	< 0.10	-	Ν
Benzo[a]pyrene	50-32-8	-	< 0.10	-	Ν
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.10	-	Ν
Dibenzo[a,h]anthracene	53-70-3	-	< 0.10	-	Ν
Benzo[g,h,i]perylene	191-24-2	-	< 0.10	-	N
Coronene	191-07-1	-	< 0.10	-	N
Total (USEPA16) PAHs	-	-	< 1.66	-	N

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	91
Acenaphthene-d10	109
Phenanthrene-d10	107
Chrysene-d12	105
Perylene-d12	107

Surrogates	% Rec
Nitrobenzene-d5	N.D
2-Fluorobiphenyl	93
Terphenyl-d14	98

Concentrations are reported on a dry weight basis.

Customer and Site Details:
Sample Details:
LIMS ID Number:
QC Batch Number:
Quantitation File:
Directory:
Dilution:

RPS Consultants: Awe BurghfieldTP8F-010 0.0-0.8Job NCL0825201Date E3127Date EInitial CalibrationDate A905PAH.MS10\Matrix1.0Ext Matrix

Job Number: Date Booked in: Date Extracted: Date Analysed: Matrix: Ext Method:

S08_5458M 27-Aug-08 02-Sep-08 06-Sep-08 Soil Ultrasonic

Accredited?: No

Target Compounds	CAS #	R.T.	Concentration	% Fit	Accr.
		(min)	mg/kg		code
Naphthalene	91-20-3	-	< 0.10	-	Ν
Acenaphthylene	208-96-8	-	< 0.10	-	Ν
Acenaphthene	83-32-9	-	< 0.10	-	Ν
Fluorene	86-73-7	-	< 0.10	-	Ν
Phenanthrene	85-01-8	-	< 0.10	-	Ν
Anthracene	120-12-7	-	< 0.10	-	Ν
Fluoranthene	206-44-0	7.06	0.24	91	Ν
Pyrene	129-00-0	7.36	0.19	93	Ν
Benzo[a]anthracene	56-55-3	9.20	0.11	91	Ν
Chrysene	218-01-9	9.26	0.14	97	Ν
Benzo[b]fluoranthene	205-99-2	10.78	0.14	94	Ν
Benzo[k]fluoranthene	207-08-9	-	< 0.10	-	Ν
Benzo[a]pyrene	50-32-8	11.18	0.10	92	Ν
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.10	-	Ν
Dibenzo[a,h]anthracene	53-70-3	-	< 0.10	-	Ν
Benzo[g,h,i]perylene	191-24-2	-	< 0.10	-	Ν
Coronene	191-07-1	-	< 0.10	-	N
Total (USEPA16) PAHs	-	-	< 1.95	-	N

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	84
Acenaphthene-d10	108
Phenanthrene-d10	106
Chrysene-d12	104
Perylene-d12	105

Surrogates	% Rec
Nitrobenzene-d5	N.D
2-Fluorobiphenyl	91
Terphenyl-d14	96

Concentrations are reported on a dry weight basis.

Customer and Site Details:
Sample Details:
LIMS ID Number:
QC Batch Number:
Quantitation File:
Directory:
Dilution:

RPS Consultants: Awe BurghfieldBH8F-002 0.6Job NCL0825202Date E3127Date EInitial CalibrationDate A905PAH.MS10\Matrix1.0Ext Matrix

Job Number: Date Booked in: Date Extracted: Date Analysed: Matrix: Ext Method:

S08_5458M 27-Aug-08 02-Sep-08 06-Sep-08 Soil Ultrasonic

Accredited?: No

Target Compounds	CAS #	R.T.	Concentration	% Fit	Accr.
		(min)	mg/kg		code
Naphthalene	91-20-3	-	< 0.10	-	N
Acenaphthylene	208-96-8	-	< 0.10	-	Ν
Acenaphthene	83-32-9	-	< 0.10	-	Ν
Fluorene	86-73-7	-	< 0.10	-	Ν
Phenanthrene	85-01-8	-	< 0.10	-	Ν
Anthracene	120-12-7	-	< 0.10	-	Ν
Fluoranthene	206-44-0	7.06	0.11	90	Ν
Pyrene	129-00-0	7.37	0.10	93	Ν
Benzo[a]anthracene	56-55-3	-	< 0.10	-	N
Chrysene	218-01-9	-	< 0.10	-	N
Benzo[b]fluoranthene	205-99-2	-	< 0.10	-	N
Benzo[k]fluoranthene	207-08-9	-	< 0.10	-	N
Benzo[a]pyrene	50-32-8	-	< 0.10	-	N
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.10	-	N
Dibenzo[a,h]anthracene	53-70-3	-	< 0.10	-	N
Benzo[g,h,i]perylene	191-24-2	-	< 0.10	-	N
Coronene	191-07-1	-	< 0.10	-	Ν
Total (USEPA16) PAHs	-	-	< 1.61	-	N

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	91
Acenaphthene-d10	110
Phenanthrene-d10	112
Chrysene-d12	109
Perylene-d12	110

Surrogates	% Rec
Nitrobenzene-d5	N.D
2-Fluorobiphenyl	93
Terphenyl-d14	96

Concentrations are reported on a dry weight basis.

Customer and Site Details:
Sample Details:
LIMS ID Number:
QC Batch Number:
Quantitation File:
Directory:
Dilution:

RPS Consultants: Awe BurghfieldBH8F-003 0.5-0.8Job NCL0825203Date E3127Date EInitial CalibrationDate A905PAH.MS10\Matrix1.0Ext Matrix

Job Number: 2 Date Booked in: 2 Date Extracted: 0 Date Analysed: 0 Matrix: 2 Ext Method: 0

S08_5458M 27-Aug-08 02-Sep-08 06-Sep-08 Soil Ultrasonic

Accredited?: No

Target Compounds	CAS #	R.T.	Concentration	% Fit	Accr.
		(min)	mg/kg		code
Naphthalene	91-20-3	-	< 0.10	-	Ν
Acenaphthylene	208-96-8	-	< 0.10	-	Ν
Acenaphthene	83-32-9	-	< 0.10	-	Ν
Fluorene	86-73-7	-	< 0.10	-	Ν
Phenanthrene	85-01-8	-	< 0.10	-	N
Anthracene	120-12-7	-	< 0.10	-	N
Fluoranthene	206-44-0	-	< 0.10	-	N
Pyrene	129-00-0	-	< 0.10	-	N
Benzo[a]anthracene	56-55-3	-	< 0.10	-	Ν
Chrysene	218-01-9	-	< 0.10	-	Ν
Benzo[b]fluoranthene	205-99-2	-	< 0.10	-	Ν
Benzo[k]fluoranthene	207-08-9	-	< 0.10	-	Ν
Benzo[a]pyrene	50-32-8	-	< 0.10	-	Ν
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.10	-	Ν
Dibenzo[a,h]anthracene	53-70-3	-	< 0.10	-	Ν
Benzo[g,h,i]perylene	191-24-2	-	< 0.10	_	N
Coronene	191-07-1	-	< 0.10	-	N
Total (USEPA16) PAHs	-	-	< 1.58	-	N

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	94
Acenaphthene-d10	110
Phenanthrene-d10	111
Chrysene-d12	112
Perylene-d12	113

Surrogates	% Rec
Nitrobenzene-d5	N.D
2-Fluorobiphenyl	94
Terphenyl-d14	98

Concentrations are reported on a dry weight basis.

Customer and Site	Details:
Sample Details:	
LIMS ID Number:	
QC Batch Number:	
Quantitation File:	
Directory:	
Dilution:	

RPS Consultants: Awe BurghfieldTP8F-013 0.5-1.0Job NCL0825204Date E3127Date EInitial CalibrationDate A908PAH.MS10\Matrix1.0Ext Matrix

Job Number: So Date Booked in: 27 Date Extracted: 02 Date Analysed: 08 Matrix: So Ext Method: U

S08_5458M 27-Aug-08 02-Sep-08 08-Sep-08 Soil Ultrasonic

Accredited?: No

Target Compounds	CAS #	R.T.	Concentration	% Fit	Accr.
		(min)	mg/kg		code
Naphthalene	91-20-3	-	< 0.10	-	Ν
Acenaphthylene	208-96-8	-	< 0.10	-	N
Acenaphthene	83-32-9	-	< 0.10	-	N
Fluorene	86-73-7	-	< 0.10	-	N
Phenanthrene	85-01-8	-	< 0.10	-	N
Anthracene	120-12-7	-	< 0.10	-	N
Fluoranthene	206-44-0	6.90	0.10	93	N
Pyrene	129-00-0	7.20	0.11	94	N
Benzo[a]anthracene	56-55-3	-	< 0.10	-	N
Chrysene	218-01-9	9.09	0.10	94	Ν
Benzo[b]fluoranthene	205-99-2	10.59	0.17	98	Ν
Benzo[k]fluoranthene	207-08-9	10.62	0.17	95	Ν
Benzo[a]pyrene	50-32-8	10.99	0.21	96	Ν
Indeno[1,2,3-cd]pyrene	193-39-5	12.36	0.21	92	Ν
Dibenzo[a,h]anthracene	53-70-3	12.42	0.17	96	Ν
Benzo[g,h,i]perylene	191-24-2	12.62	0.21	93	N
Coronene	191-07-1	14.15	0.16	94	N
Total (USEPA16) PAHs	-	-	< 2.17	-	N

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	102
Acenaphthene-d10	110
Phenanthrene-d10	109
Chrysene-d12	115
Perylene-d12	124

Surrogates	% Rec
Nitrobenzene-d5	N.D
2-Fluorobiphenyl	94
Terphenyl-d14	97

Concentrations are reported on a dry weight basis.

Customer and Site Details:
Sample Details:
LIMS ID Number:
QC Batch Number:
Quantitation File:
Directory:
Dilution:

RPS Consultants: Awe BurghfieldTP8F-001 0.75Job NCL0825205Date E3127Date EInitial CalibrationDate A908PAH.MS10\Matrix1.0Ext Matrix

Job Number: Date Booked in: Date Extracted: Date Analysed: Matrix: Ext Method:

S08_5458M 27-Aug-08 02-Sep-08 08-Sep-08 Soil Ultrasonic

Accredited?: No

Target Compounds	CAS #	R.T.	Concentration	% Fit	Accr.
		(min)	mg/kg		code
Naphthalene	91-20-3	-	< 0.10	-	Ν
Acenaphthylene	208-96-8	-	< 0.10	-	Ν
Acenaphthene	83-32-9	-	< 0.10	-	Ν
Fluorene	86-73-7	-	< 0.10	-	Ν
Phenanthrene	85-01-8	-	< 0.10	-	Ν
Anthracene	120-12-7	-	< 0.10	-	Ν
Fluoranthene	206-44-0	-	< 0.10	-	Ν
Pyrene	129-00-0	-	< 0.10	-	Ν
Benzo[a]anthracene	56-55-3	-	< 0.10	-	Ν
Chrysene	218-01-9	-	< 0.10	-	Ν
Benzo[b]fluoranthene	205-99-2	-	< 0.10	-	Ν
Benzo[k]fluoranthene	207-08-9	-	< 0.10	-	Ν
Benzo[a]pyrene	50-32-8	-	< 0.10	-	Ν
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.10	-	Ν
Dibenzo[a,h]anthracene	53-70-3	-	< 0.10	-	Ν
Benzo[g,h,i]perylene	191-24-2	-	< 0.10	-	Ν
Coronene	191-07-1	-	< 0.10	-	N
Total (USEPA16) PAHs	-	-	< 1.65	-	N

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	108
Acenaphthene-d10	114
Phenanthrene-d10	110
Chrysene-d12	113
Perylene-d12	119

Surrogates	% Rec
Nitrobenzene-d5	N.D
2-Fluorobiphenyl	93
Terphenyl-d14	96

Concentrations are reported on a dry weight basis.

Customer and Site Details:
Sample Details:
LIMS ID Number:
QC Batch Number:
Quantitation File:
Directory:
Dilution:

RPS Consultants: Awe BurghfieldTP8F-003 0.6Job NCL0825206Date E3127Date EInitial CalibrationDate A908PAH.MS10\Matrix1.0Ext Matrix

Job Number:SJob Number:SDate Booked in:SDate Extracted:SDate Analysed:SMatrix:SExt Method:S

S08_5458M 27-Aug-08 02-Sep-08 08-Sep-08 Soil Ultrasonic

Accredited?: No

Target Compounds	CAS #	R.T.	Concentration	% Fit	Accr.
		(min)	mg/kg		code
Naphthalene	91-20-3	-	< 0.09	-	Ν
Acenaphthylene	208-96-8	-	< 0.09	-	Ν
Acenaphthene	83-32-9	-	< 0.09	-	Ν
Fluorene	86-73-7	-	< 0.09	-	Ν
Phenanthrene	85-01-8	-	< 0.09	-	Ν
Anthracene	120-12-7	-	< 0.09	-	Ν
Fluoranthene	206-44-0	-	< 0.09	-	Ν
Pyrene	129-00-0	-	< 0.09	-	Ν
Benzo[a]anthracene	56-55-3	-	< 0.09	-	Ν
Chrysene	218-01-9	-	< 0.09	-	Ν
Benzo[b]fluoranthene	205-99-2	-	< 0.09	-	Ν
Benzo[k]fluoranthene	207-08-9	-	< 0.09	-	Ν
Benzo[a]pyrene	50-32-8	-	< 0.09	-	Ν
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.09	-	Ν
Dibenzo[a,h]anthracene	53-70-3	-	< 0.09	-	Ν
Benzo[g,h,i]perylene	191-24-2	-	< 0.09	-	N
Coronene	191-07-1	-	< 0.09	-	N
Total (USEPA16) PAHs	-	-	< 1.52	-	N

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	98
Acenaphthene-d10	112
Phenanthrene-d10	103
Chrysene-d12	108
Perylene-d12	120

Surrogates	% Rec
Nitrobenzene-d5	N.D
2-Fluorobiphenyl	89
Terphenyl-d14	92

Concentrations are reported on a dry weight basis.

Customer and Site De	tails:
Sample Details:	
LIMS ID Number:	
QC Batch Number:	
Quantitation File:	
Directory:	
Dilution:	

RPS Consultants: Awe BurghfieldTP8F-008 1.1Job NCL0825207Date E3127Date EInitial CalibrationDate A908PAH.MS10\Matrix1.0Ext Me

Job Number:SJob Number:SDate Booked in:2Date Extracted:0Date Analysed:0Matrix:SExt Method:L

S08_5458M 27-Aug-08 02-Sep-08 08-Sep-08 Soil Ultrasonic

Accredited?: No

Target Compounds	CAS #	R.T.	Concentration	% Fit	Accr.
		(min)	mg/kg		code
Naphthalene	91-20-3	-	< 0.10	-	Ν
Acenaphthylene	208-96-8	-	< 0.10	-	N
Acenaphthene	83-32-9	-	< 0.10	-	N
Fluorene	86-73-7	-	< 0.10	-	N
Phenanthrene	85-01-8	-	< 0.10	-	N
Anthracene	120-12-7	-	< 0.10	-	N
Fluoranthene	206-44-0	-	< 0.10	-	Ν
Pyrene	129-00-0	-	< 0.10	-	Ν
Benzo[a]anthracene	56-55-3	-	< 0.10	-	N
Chrysene	218-01-9	-	< 0.10	-	Ν
Benzo[b]fluoranthene	205-99-2	-	< 0.10	-	Ν
Benzo[k]fluoranthene	207-08-9	-	< 0.10	-	Ν
Benzo[a]pyrene	50-32-8	-	< 0.10	-	Ν
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.10	-	N
Dibenzo[a,h]anthracene	53-70-3	-	< 0.10	-	N
Benzo[g,h,i]perylene	191-24-2	-	< 0.10	-	Ν
Coronene	191-07-1	-	< 0.10	-	N
Total (USEPA16) PAHs	-	-	< 1.54	-	N

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	104
Acenaphthene-d10	111
Phenanthrene-d10	105
Chrysene-d12	114
Perylene-d12	124

Surrogates	% Rec
Nitrobenzene-d5	N.D
2-Fluorobiphenyl	90
Terphenyl-d14	92

Concentrations are reported on a dry weight basis.

Customer and Site I	Details:
Sample Details:	
LIMS ID Number:	
QC Batch Number:	
Quantitation File:	
Directory:	
Dilution:	

RPS Consultants: Awe BurghfieldTP8F-002 0.6Job NCL0825208Date E3127Date EInitial CalibrationDate A908PAH.MS10\Matrix1.0Ext Matrix

Job Number:SJob Number:SDate Booked in:SDate Extracted:SDate Analysed:SMatrix:SExt Method:S

S08_5458M 27-Aug-08 02-Sep-08 08-Sep-08 Soil Ultrasonic

Accredited?: No

Target Compounds	CAS #	R.T.	Concentration	% Fit	Accr.
		(min)	mg/kg		code
Naphthalene	91-20-3	-	< 0.09	-	Ν
Acenaphthylene	208-96-8	-	< 0.09	-	Ν
Acenaphthene	83-32-9	-	< 0.09	-	Ν
Fluorene	86-73-7	-	< 0.09	-	Ν
Phenanthrene	85-01-8	-	< 0.09	-	Ν
Anthracene	120-12-7	-	< 0.09	-	Ν
Fluoranthene	206-44-0	-	< 0.09	-	Ν
Pyrene	129-00-0	-	< 0.09	-	Ν
Benzo[a]anthracene	56-55-3	-	< 0.09	-	Ν
Chrysene	218-01-9	-	< 0.09	-	Ν
Benzo[b]fluoranthene	205-99-2	-	< 0.09	-	Ν
Benzo[k]fluoranthene	207-08-9	-	< 0.09	-	Ν
Benzo[a]pyrene	50-32-8	-	< 0.09	-	Ν
Indeno[1,2,3-cd]pyrene	193-39-5	12.36	0.20	91	Ν
Dibenzo[a,h]anthracene	53-70-3	12.41	0.15	М	Ν
Benzo[g,h,i]perylene	191-24-2	12.62	0.27	94	Ν
Coronene	191-07-1	14.14	1.24	94	N
Total (USEPA16) PAHs	-	-	< 1.90	-	N

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	105
Acenaphthene-d10	113
Phenanthrene-d10	111
Chrysene-d12	119
Perylene-d12	128

Surrogates	% Rec
Nitrobenzene-d5	N.D
2-Fluorobiphenyl	89
Terphenyl-d14	95

Concentrations are reported on a dry weight basis.

Customer and Site	Details:
Sample Details:	
LIMS ID Number:	
QC Batch Number:	
Quantitation File:	
Directory:	
Dilution:	

RPS Consultants: Awe BurghfieldTP8F-009 0.85Job NCL0825209Date E3127Date EInitial CalibrationDate A908PAH.MS10\Matrix1.0Ext Matrix

Job Number: Date Booked in: Date Extracted: Date Analysed: Matrix: Ext Method:

S08_5458M 27-Aug-08 02-Sep-08 08-Sep-08 Soil Ultrasonic

Accredited?: No

Target Compounds	CAS #	R.T.	Concentration	% Fit	Accr.
		(min)	mg/kg		code
Naphthalene	91-20-3	-	< 0.10	-	Ν
Acenaphthylene	208-96-8	-	< 0.10	-	Ν
Acenaphthene	83-32-9	-	< 0.10	-	Ν
Fluorene	86-73-7	-	< 0.10	-	Ν
Phenanthrene	85-01-8	-	< 0.10	-	Ν
Anthracene	120-12-7	-	< 0.10	-	Ν
Fluoranthene	206-44-0	6.89	0.21	92	Ν
Pyrene	129-00-0	7.19	0.19	100	Ν
Benzo[a]anthracene	56-55-3	9.03	0.14	93	Ν
Chrysene	218-01-9	9.08	0.15	95	Ν
Benzo[b]fluoranthene	205-99-2	10.58	0.24	81	Ν
Benzo[k]fluoranthene	207-08-9	10.60	0.10	76	Ν
Benzo[a]pyrene	50-32-8	10.98	0.21	97	Ν
Indeno[1,2,3-cd]pyrene	193-39-5	12.35	0.35	91	Ν
Dibenzo[a,h]anthracene	53-70-3	12.41	0.17	93	Ν
Benzo[g,h,i]perylene	191-24-2	12.62	0.37	94	Ν
Coronene	191-07-1	14.15	1.38	94	N
Total (USEPA16) PAHs	-	-	< 2.78	-	N

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	107
Acenaphthene-d10	112
Phenanthrene-d10	112
Chrysene-d12	122
Perylene-d12	135

Surrogates	% Rec
Nitrobenzene-d5	N.D
2-Fluorobiphenyl	88
Terphenyl-d14	92

Concentrations are reported on a dry weight basis.

Customer and Site Details:
Sample Details:
LIMS ID Number:
QC Batch Number:
Quantitation File:
Directory:
Dilution:

RPS Consultants: Awe BurghfieldTP8F-004 0.0-1.0Job NCL0825210Date E3127Date EInitial CalibrationDate A908PAH.MS10\Matrix1.0Ext Matrix

Job Number: S Date Booked in: 2 Date Extracted: 0 Date Analysed: 0 Matrix: S Ext Method: U

S08_5458M 27-Aug-08 02-Sep-08 08-Sep-08 Soil Ultrasonic

Accredited?: No

Target Compounds	CAS #	R.T.	Concentration	% Fit	Accr.
		(min)	mg/kg		code
Naphthalene	91-20-3	-	< 0.12	-	Ν
Acenaphthylene	208-96-8	-	< 0.12	-	Ν
Acenaphthene	83-32-9	-	< 0.12	-	Ν
Fluorene	86-73-7	-	< 0.12	-	Ν
Phenanthrene	85-01-8	-	< 0.12	-	Ν
Anthracene	120-12-7	-	< 0.12	-	Ν
Fluoranthene	206-44-0	-	< 0.12	-	Ν
Pyrene	129-00-0	-	< 0.12	-	Ν
Benzo[a]anthracene	56-55-3	-	< 0.12	-	Ν
Chrysene	218-01-9	-	< 0.12	-	Ν
Benzo[b]fluoranthene	205-99-2	-	< 0.12	-	Ν
Benzo[k]fluoranthene	207-08-9	-	< 0.12	-	Ν
Benzo[a]pyrene	50-32-8	-	< 0.12	-	Ν
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.12	-	Ν
Dibenzo[a,h]anthracene	53-70-3	-	< 0.12	-	Ν
Benzo[g,h,i]perylene	191-24-2	-	< 0.12	-	Ν
Coronene	191-07-1	-	< 0.12	-	N
Total (USEPA16) PAHs	-	-	< 1.95	-	N

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	112
Acenaphthene-d10	116
Phenanthrene-d10	113
Chrysene-d12	120
Perylene-d12	126

Surrogates	% Rec
Nitrobenzene-d5	N.D
2-Fluorobiphenyl	91
Terphenyl-d14	97

Concentrations are reported on a dry weight basis.

Customer and Site Details:
Sample Details:
LIMS ID Number:
QC Batch Number:
Quantitation File:
Directory:
Dilution:

RPS Consultants: Awe BurghfieldTP8F-007 0.0-1.0Job NCL0825211Date E3127Date EInitial CalibrationDate A908PAH.MS10\Matrix1.0Ext Matrix

Job Number: 2 Date Booked in: 2 Date Extracted: 0 Date Analysed: 0 Matrix: 2 Ext Method: 0

S08_5458M 27-Aug-08 02-Sep-08 08-Sep-08 Soil Ultrasonic

Accredited?: No

Target Compounds	CAS #	R.T.	Concentration	% Fit	Accr.
		(min)	mg/kg		code
Naphthalene	91-20-3	-	< 0.10	-	Ν
Acenaphthylene	208-96-8	-	< 0.10	-	Ν
Acenaphthene	83-32-9	-	< 0.10	-	Ν
Fluorene	86-73-7	-	< 0.10	-	Ν
Phenanthrene	85-01-8	5.25	0.60	97	Ν
Anthracene	120-12-7	-	< 0.10	-	Ν
Fluoranthene	206-44-0	6.89	0.84	95	Ν
Pyrene	129-00-0	7.19	0.63	95	Ν
Benzo[a]anthracene	56-55-3	9.03	0.29	92	Ν
Chrysene	218-01-9	9.08	0.42	96	Ν
Benzo[b]fluoranthene	205-99-2	10.59	0.37	96	Ν
Benzo[k]fluoranthene	207-08-9	10.61	0.34	92	Ν
Benzo[a]pyrene	50-32-8	10.99	0.38	93	Ν
Indeno[1,2,3-cd]pyrene	193-39-5	12.35	0.27	92	Ν
Dibenzo[a,h]anthracene	53-70-3	-	< 0.10	-	Ν
Benzo[g,h,i]perylene	191-24-2	12.62	0.24	93	Ν
Coronene	191-07-1	14.15	0.10	84	N
Total (USEPA16) PAHs	-	-	< 5.00	-	N

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	102
Acenaphthene-d10	112
Phenanthrene-d10	105
Chrysene-d12	115
Perylene-d12	125

Surrogates	% Rec
Nitrobenzene-d5	N.D
2-Fluorobiphenyl	87
Terphenyl-d14	89

Concentrations are reported on a dry weight basis.

Customer and Site	Details:
Sample Details:	
LIMS ID Number:	
QC Batch Number:	
Quantitation File:	
Directory:	
Dilution:	

RPS Consultants: Awe BurghfieldTP8F-011 0.0-0.9Job NCL0825212Date E3127Date EInitial CalibrationDate A908PAH.MS10\Matrix1.0Ext Matrix

Job Number: 2 Date Booked in: 2 Date Extracted: 0 Date Analysed: 0 Matrix: 2 Ext Method: 0

S08_5458M 27-Aug-08 02-Sep-08 08-Sep-08 Soil Ultrasonic

Accredited?: No

Target Compounds	CAS #	R.T.	Concentration	% Fit	Accr.
		(min)	mg/kg		code
Naphthalene	91-20-3	-	< 0.11	-	Ν
Acenaphthylene	208-96-8	-	< 0.11	-	Ν
Acenaphthene	83-32-9	-	< 0.11	-	Ν
Fluorene	86-73-7	-	< 0.11	-	Ν
Phenanthrene	85-01-8	-	< 0.11	-	Ν
Anthracene	120-12-7	-	< 0.11	-	Ν
Fluoranthene	206-44-0	-	< 0.11	-	Ν
Pyrene	129-00-0	-	< 0.11	-	Ν
Benzo[a]anthracene	56-55-3	-	< 0.11	-	Ν
Chrysene	218-01-9	-	< 0.11	-	Ν
Benzo[b]fluoranthene	205-99-2	-	< 0.11	-	Ν
Benzo[k]fluoranthene	207-08-9	-	< 0.11	-	Ν
Benzo[a]pyrene	50-32-8	-	< 0.11	-	Ν
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.11	-	Ν
Dibenzo[a,h]anthracene	53-70-3	-	< 0.11	-	Ν
Benzo[g,h,i]perylene	191-24-2	-	< 0.11	-	N
Coronene	191-07-1	-	< 0.11	-	N
Total (USEPA16) PAHs	-	-	< 1.68	-	N

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	102
Acenaphthene-d10	112
Phenanthrene-d10	109
Chrysene-d12	118
Perylene-d12	130

Surrogates	% Rec
Nitrobenzene-d5	N.D
2-Fluorobiphenyl	88
Terphenyl-d14	92

Concentrations are reported on a dry weight basis.

Customer and Site De	tails:
Sample Details:	
LIMS ID Number:	
QC Batch Number:	
Quantitation File:	
Directory:	
Dilution:	

RPS Consultants: Awe BurghfieldTP8F-012 0.0-0.7Job NCL0825213Date E3127Date EInitial CalibrationDate A908PAH.MS10\Matrix1.0Ext Matrix

Job Number: SC Date Booked in: 27 Date Extracted: 02 Date Analysed: 08 Matrix: Sc Ext Method: UI

S08_5458M 27-Aug-08 02-Sep-08 08-Sep-08 Soil Ultrasonic

Accredited?: No

Target Compounds	CAS #	R.T.	Concentration	% Fit	Accr.
		(min)	mg/kg		code
Naphthalene	91-20-3	-	< 0.12	-	Ν
Acenaphthylene	208-96-8	-	< 0.12	-	Ν
Acenaphthene	83-32-9	-	< 0.12	-	Ν
Fluorene	86-73-7	-	< 0.12	-	Ν
Phenanthrene	85-01-8	5.25	0.56	96	Ν
Anthracene	120-12-7	-	< 0.12	-	Ν
Fluoranthene	206-44-0	6.89	1.21	94	Ν
Pyrene	129-00-0	7.19	0.89	98	Ν
Benzo[a]anthracene	56-55-3	9.03	0.30	91	Ν
Chrysene	218-01-9	9.08	0.57	97	Ν
Benzo[b]fluoranthene	205-99-2	10.58	0.50	89	Ν
Benzo[k]fluoranthene	207-08-9	10.60	0.43	84	Ν
Benzo[a]pyrene	50-32-8	10.98	0.45	97	Ν
Indeno[1,2,3-cd]pyrene	193-39-5	12.36	0.39	100	Ν
Dibenzo[a,h]anthracene	53-70-3	-	< 0.12	-	Ν
Benzo[g,h,i]perylene	191-24-2	12.62	0.34	92	Ν
Coronene	191-07-1	14.14	0.23	97	N
Total (USEPA16) PAHs	-	-	< 6.40	-	N

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	107
Acenaphthene-d10	114
Phenanthrene-d10	114
Chrysene-d12	125
Perylene-d12	136

Surrogates	% Rec
Nitrobenzene-d5	N.D
2-Fluorobiphenyl	88
Terphenyl-d14	92

Concentrations are reported on a dry weight basis.

Customer and Site Details
Sample Details:
LIMS ID Number:
QC Batch Number:
Quantitation File:
Directory:
Dilution:

RPS Consultants: Awe BurghfieldTP8F-012 1.2Job NCL0825214Date E3127Date EInitial CalibrationDate A908PAH.MS10\Matrix1.0Ext Matrix

Job Number: 2 Date Booked in: 2 Date Extracted: 0 Date Analysed: 0 Matrix: 2 Ext Method: 0

S08_5458M 27-Aug-08 02-Sep-08 08-Sep-08 Soil Ultrasonic

Accredited?: No

Target Compounds	CAS #	R.T.	Concentration	% Fit	Accr.
		(min)	mg/kg		code
Naphthalene	91-20-3	-	< 0.10	-	Ν
Acenaphthylene	208-96-8	-	< 0.10	-	Ν
Acenaphthene	83-32-9	-	< 0.10	-	Ν
Fluorene	86-73-7	-	< 0.10	-	Ν
Phenanthrene	85-01-8	-	< 0.10	-	Ν
Anthracene	120-12-7	-	< 0.10	-	Ν
Fluoranthene	206-44-0	-	< 0.10	-	Ν
Pyrene	129-00-0	-	< 0.10	-	Ν
Benzo[a]anthracene	56-55-3	-	< 0.10	-	N
Chrysene	218-01-9	-	< 0.10	-	Ν
Benzo[b]fluoranthene	205-99-2	-	< 0.10	-	Ν
Benzo[k]fluoranthene	207-08-9	-	< 0.10	-	Ν
Benzo[a]pyrene	50-32-8	-	< 0.10	-	N
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.10	-	Ν
Dibenzo[a,h]anthracene	53-70-3	-	< 0.10	-	Ν
Benzo[g,h,i]perylene	191-24-2	-	< 0.10	-	N
Coronene	191-07-1	-	< 0.10	-	N
Total (USEPA16) PAHs	-	-	< 1.66	-	N

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	111
Acenaphthene-d10	118
Phenanthrene-d10	110
Chrysene-d12	115
Perylene-d12	128

Surrogates	% Rec
Nitrobenzene-d5	N.D
2-Fluorobiphenyl	89
Terphenyl-d14	94

Concentrations are reported on a dry weight basis.
Polycyclic Aromatic Hydrocarbons GC/MS (SIM)

Customer and Site Details:
Sample Details:
LIMS ID Number:
QC Batch Number:
Quantitation File:
Directory:
Dilution:

RPS Consultants: Awe BurghfieldTP8S-004 0.9Job NCL0825215Date E3127Date EInitial CalibrationDate A908PAH.MS10\Matrix1.0Ext Matrix

Job Number: Date Booked in: Date Extracted: Date Analysed: Matrix: Ext Method:

S08_5458M 27-Aug-08 02-Sep-08 08-Sep-08 Soil Ultrasonic

Accredited?: No

Target Compounds	CAS #	R.T.	Concentration	% Fit	Accr.
		(min)	mg/kg		code
Naphthalene	91-20-3	-	< 0.10	-	Ν
Acenaphthylene	208-96-8	-	< 0.10	-	Ν
Acenaphthene	83-32-9	-	< 0.10	-	Ν
Fluorene	86-73-7	-	< 0.10	-	Ν
Phenanthrene	85-01-8	-	< 0.10	-	Ν
Anthracene	120-12-7	-	< 0.10	-	Ν
Fluoranthene	206-44-0	-	< 0.10	-	Ν
Pyrene	129-00-0	-	< 0.10	-	Ν
Benzo[a]anthracene	56-55-3	-	< 0.10	-	Ν
Chrysene	218-01-9	-	< 0.10	-	Ν
Benzo[b]fluoranthene	205-99-2	-	< 0.10	-	Ν
Benzo[k]fluoranthene	207-08-9	-	< 0.10	-	Ν
Benzo[a]pyrene	50-32-8	-	< 0.10	-	Ν
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.10	-	Ν
Dibenzo[a,h]anthracene	53-70-3	-	< 0.10	-	Ν
Benzo[g,h,i]perylene	191-24-2	-	< 0.10	_	Ν
Coronene	191-07-1	-	< 0.10	-	N
Total (USEPA16) PAHs	-	-	< 1.65	-	N

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	101
Acenaphthene-d10	110
Phenanthrene-d10	104
Chrysene-d12	111
Perylene-d12	118

Surrogates	% Rec
Nitrobenzene-d5	N.D
2-Fluorobiphenyl	89
Terphenyl-d14	93

Concentrations are reported on a dry weight basis.

The Total PAH result is the sum of non-rounded individual PAH results and therefore may differ to the sum of the rounded individual PAH results printed above. By convention, where any one or more result is a "less than", the total is expressed as a "less than" and includes the "less than" concentration within the total.

Polycyclic Aromatic Hydrocarbons GC/MS (SIM)

Customer and Site Details:
Sample Details:
LIMS ID Number:
QC Batch Number:
Quantitation File:
Directory:
Dilution:

RPS Consultants: Awe BurghfieldTP8F-014 0.85Job NCL0825216Date E3127Date EInitial CalibrationDate A908PAH.MS10\Matrix1.0Ext Matrix

Job Number: 2 Date Booked in: 2 Date Extracted: 0 Date Analysed: 0 Matrix: 2 Ext Method: 0

S08_5458M 27-Aug-08 02-Sep-08 08-Sep-08 Soil Ultrasonic

Accredited?: No

Target Compounds	CAS #	R.T.	Concentration	% Fit	Accr.
		(min)	mg/kg		code
Naphthalene	91-20-3	-	< 0.10	-	Ν
Acenaphthylene	208-96-8	-	< 0.10	-	Ν
Acenaphthene	83-32-9	-	< 0.10	-	Ν
Fluorene	86-73-7	-	< 0.10	-	Ν
Phenanthrene	85-01-8	-	< 0.10	-	Ν
Anthracene	120-12-7	-	< 0.10	-	Ν
Fluoranthene	206-44-0	-	< 0.10	-	Ν
Pyrene	129-00-0	-	< 0.10	-	Ν
Benzo[a]anthracene	56-55-3	-	< 0.10	-	Ν
Chrysene	218-01-9	-	< 0.10	-	Ν
Benzo[b]fluoranthene	205-99-2	-	< 0.10	-	Ν
Benzo[k]fluoranthene	207-08-9	-	< 0.10	-	Ν
Benzo[a]pyrene	50-32-8	-	< 0.10	-	Ν
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.10	-	Ν
Dibenzo[a,h]anthracene	53-70-3	-	< 0.10	-	Ν
Benzo[g,h,i]perylene	191-24-2	-	< 0.10	-	Ν
Coronene	191-07-1	-	< 0.10	-	N
Total (USEPA16) PAHs	-	-	< 1.62	-	N

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	97
Acenaphthene-d10	104
Phenanthrene-d10	97
Chrysene-d12	101
Perylene-d12	113

Surrogates	% Rec
Nitrobenzene-d5	N.D
2-Fluorobiphenyl	90
Terphenyl-d14	97

Concentrations are reported on a dry weight basis.

The Total PAH result is the sum of non-rounded individual PAH results and therefore may differ to the sum of the rounded individual PAH results printed above. By convention, where any one or more result is a "less than", the total is expressed as a "less than" and includes the "less than" concentration within the total.

Polychlorinated Biphenyls (congeners)

RPS Consultants: Awe Burghfield S08_5458M 083107 0902PCB.GC11 Ultrasonic N				Matrix: Date Booked Date Extracte Date Analyse	l in: ed: ed:	SOIL 27-Aug-08 02-Sep-08 03-Sep-08					
	Concentration, (µg/kg)										
Customer ID	PCB28	PCB52	PCB101	PCB118	PCB153	PCB138	PCB180				
TP8F-012 0.0-0.7	<6.5	<6.5	<6.5	<6.5	<6.5	<6.5	<6.5				
TP8F-012 1.2	<5.2	<5.2	<5.2	<5.2	<5.2	<5.2	<5.2				
				1		1					
	RPS Consultants: Awe Burghfield S08_5458M 083107 0902PCB.GC11 Ultrasonic N Customer ID TP8F-012 0.0-0.7 TP8F-012 1.2	RPS Consultants: Awe Burghfield S08_5458M 083107 0902PCB.GC11 Ultrasonic N Customer ID PCB28 TP8F-012 0.0-0.7 <	RPS Consultants: Awe Burghfield S08_5458M 083107 0902PCB.GC11 Ultrasonic N Customer ID PCB28 PCB52 TP8F-012 0.0-0.7 <6.5	RPS Consultants: Awe Burghfield S08_5458M 083107 0902PCB.GC11 Ultrasonic N Corr Customer ID PCB28 PCB52 PCB101 TP8F-012 0.0-0.7 <6.5	RPS Consultants: Awe Burghfield Matrix: S08_5458M Date Booked 0902PCB.GC11 Date Analyse Ultrasonic Date Solution N Concentration, Customer ID PCB28 PCB52 PCB101 PCB118 TP8F-012 0.0-0.7 <6.5	RPS Consultants: Awe Burghfield Matrix: S08_5458M Date Booked in: 083107 Date Extracted: 0902PCB.GC11 Date Analysed: Ultrasonic Date Analysed: N Concentration, (µg/kg) Customer ID PCB28 PCB52 PCB101 PCB118 PCB153 TP8F-012 0.0-0.7 <6.5	RPS Consultants: Awe Burghfield Matrix: SOIL S08_5458M Date Booked in: 27-Aug-08 083107 Date Extracted: 02-Sep-08 0902PCB.GC11 Date Analysed: 03-Sep-08 Ultrasonic N Solt Solt Customer ID PCB28 PCB52 PCB101 PCB18 PCB153 PCB138 TP8F-012 0.0-0.7 < 6.5				

Semi-Volatile Organic Compounds

				Accr	edited?:	No					
Customer and Site Details: Sample Details: LIMS ID Number: Job Number:	RPS Consultants: TP8F-009 0.85 CL0825209 S08_5458M	Awe Burghfie	ld Date Booked in: Date Extracted: Date Analysed:	27-Aug-08 03-Sep-08 07-Sep-08		Matrix: Ext Method: Operator: Directory/Quant File:	Soil Ultrasonic AB/SO 905SVOC_MS9\	0905CCC5.D	QC Batch Number: Multiplier: Dilution Factor: GPC (Y/N)	3137 0.2 1 N	
Target Compounds	CAS #	R.T. (min)	Concentration mg/kg	% Fit	Accr. code	Target Compounds	CAS #	R.T.	Concentration mg/kg	% Fit	Accr. code
Phenol	108-95-2	-	< 3.0	-	N	2,4-Dinitrophenol	51-28-5 *	-	< 1.0	-	N
bis(2-Chloroethyl)ether	111-44-4	-	< 0.6	-	N	Dibenzofuran	132-64-9	-	< 0.6	-	N
2-Chlorophenol	95-57-8	-	< 3.0	-	N	4-Nitrophenol	100-02-7	-	< 6.0	-	N
1,3-Dichlorobenzene	541-73-1	-	< 0.6	-	N	2,4-Dinitrotoluene	121-14-2	-	< 0.6	-	N
1,4-Dichlorobenzene	106-46-7	-	< 0.6	-	N	Fluorene	86-73-7	-	< 0.3	-	N
Benzyl alcohol	100-51-6	-	< 0.6	-	N	Diethylphthalate	84-66-2	-	< 0.6	-	N
1,2-Dichlorobenzene	95-50-1	-	< 0.6	-	N	4-Chlorophenyl-phenylether	7005-72-3	-	< 0.6	-	N
2-Methylphenol	95-48-7	-	< 0.6	-	N	4,6-Dinitro-2-methylphenol	534-52-1	-	< 6.0	-	N
bis(2-Chloroisopropyl)ether	108-60-1	-	< 0.6	-	N	4-Nitroaniline	100-01-6	-	< 0.6	-	N
Hexachloroethane	67-72-1	-	< 0.6	-	N	N-Nitrosodiphenylamine	86-30-6 *	-	< 0.6	-	N
N-Nitroso-di-n-propylamine	621-64-7	-	< 0.6	-	Ν	4-Bromophenyl-phenylether	101-55-3	-	< 0.6	-	N
3- & 4-Methylphenol	108-39-4/106-44-5	-	< 3.0	-	N	Hexachlorobenzene	118-74-1	-	< 0.6	-	N
Nitrobenzene	98-95-3	-	< 0.6	-	N	Pentachlorophenol	87-86-5	-	< 6.0	-	Ν
Isophorone	78-59-1	-	< 0.6	-	N	Phenanthrene	85-01-8	-	< 0.3	-	Ν
2-Nitrophenol	88-75-5	-	< 3.0	-	N	Anthracene	120-12-7	-	< 0.3	-	Ν
2,4-Dimethylphenol	105-67-9	-	< 3.0	-	N	Di-n-butylphthalate	84-74-2	-	< 0.6	-	Ν
Benzoic Acid	65-85-0 *	-	< 13.0	-	N	Fluoranthene	206-44-0	-	< 0.3	-	Ν
bis(2-Chloroethoxy)methane	111-91-1	-	< 0.6	-	N	Pyrene	129-00-0	-	< 0.3	-	N
2,4-Dichlorophenol	120-83-2	-	< 3.0	-	N	Butylbenzylphthalate	85-68-7	-	< 0.6	-	Ν
1,2,4-Trichlorobenzene	120-82-1	-	< 0.6	-	N	Benzo[a]anthracene	56-55-3	-	< 0.3	-	Ν
Naphthalene	91-20-3	-	< 0.3	-	N	Chrysene	218-01-9	-	< 0.3	-	N
4-Chlorophenol	106-48-9	-	< 3.0	-	N	3,3'-Dichlorobenzidine	91-94-1	-	< 3.0	-	N
4-Chloroaniline	106-47-8 *	-	< 0.6	-	N	bis(2-Ethylhexyl)phthalate	117-81-7	-	< 0.6	-	N
Hexachlorobutadiene	87-68-3	-	< 0.6	-	N	Di-n-octylphthalate	117-84-0	-	< 0.3	-	Ν
4-Chloro-3-methylphenol	59-50-7	-	< 0.6	-	N	Benzo[b]fluoranthene	205-99-2	-	< 0.3	-	N
2-Methylnaphthalene	91-57-6	-	< 0.3	-	N	Benzo[k]fluoranthene	207-08-9	-	< 0.3	-	N
1-Methylnaphthalene	90-12-0	-	< 0.3	-	N	Benzo[a]pyrene	50-32-8	-	< 0.3	-	N
Hexachlorocyclopentadiene	77-47-4 *	-	< 0.6	-	N	Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.3	-	N
2,4,6-Trichlorophenol	88-06-2	-	< 3.0	-	N	Dibenzo[a,h]anthracene	53-70-3	-	< 0.3	-	N
2,4,5-Trichlorophenol	95-95-4	-	< 3.0	-	N	Benzo[g,h,i]perylene	191-24-2	-	< 0.3	-	Ν
2-Chloronaphthalene	91-58-7	-	< 0.3	-	N		"M" denotes that %	6 fit has been r	nanually interpreted		
Biphenyl	92-52-4	-	< 0.3	-	N			-			
Diphenyl ether	101-84-8	-	< 0.3	-	N	Internal Standards	% Area		Surrogates	% Rec	
2-Nitroaniline	88-74-4	-	< 0.6	-	N	1,4-Dichlorobenzene-d4	111		2-Fluorophenol	N.D	
Acenaphthylene	208-96-8	-	< 0.3	-	N	Naphthalene-d8	112]	Phenol-d5	75	
Dimethylphthalate	131-11-3	-	< 0.6	-	N	Acenaphthene-d10	105]	Nitrobenzene-d5	N.D	
2,6-Dinitrotoluene	606-20-2	-	< 0.6	-	N	Phenanthrene-d10	113]	2-Fluorobiphenyl	73	
Acenaphthene	83-32-9	-	< 0.3	-	N	Chrysene-d12	117		2,4,6-Tribromophenol	65	
3-Nitroaniline	99-09-2	-	< 0.6	-	Ν	Pervlene-d12	127		Terphenyl-d14	76	

Concentrations are reported on a dry weight basis.

This analysis was conducted on an 'As Recieved' basis.

Semi-Volatile Organic Compounds

				Accr	edited?:	No					
Customer and Site Details: Sample Details: LIMS ID Number: Job Number:	RPS Consultants: <i>/</i> TP8F-012 0.0-0.7 CL0825213 S08_5458M	Awe Burghfie	Date Booked in: Date Extracted: Date Analysed:	27-Aug-08 03-Sep-08 07-Sep-08		Matrix: Ext Method: Operator: Directory/Quant File:	Soil Ultrasonic AB/SO 905SVOC_MS9\	0905CCC5.D	QC Batch Number: Multiplier: Dilution Factor: GPC (Y/N)	3137 0.2 1 N	
Target Compounds	CAS #	R.T. (min)	Concentration mg/kg	% Fit	Accr. code	Target Compounds	CAS #	R.T.	Concentration mg/kg	% Fit	Accr code
Phenol	108-95-2	-	< 3.0	-	N	2,4-Dinitrophenol	51-28-5 *	-	< 2.0	-	N
bis(2-Chloroethyl)ether	111-44-4	-	< 0.8	-	N	Dibenzofuran	132-64-9	-	< 0.8	-	N
2-Chlorophenol	95-57-8	-	< 3.0	-	N	4-Nitrophenol	100-02-7	-	< 8.0	-	N
1,3-Dichlorobenzene	541-73-1	-	< 0.8	-	Ν	2,4-Dinitrotoluene	121-14-2	-	< 0.8	-	N
1,4-Dichlorobenzene	106-46-7	-	< 0.8	-	Ν	Fluorene	86-73-7	-	< 0.3	-	N
Benzyl alcohol	100-51-6	-	< 0.8	-	Ν	Diethylphthalate	84-66-2	-	< 0.8	-	N
1,2-Dichlorobenzene	95-50-1	-	< 0.8	-	Ν	4-Chlorophenyl-phenylether	7005-72-3	-	< 0.8	-	N
2-Methylphenol	95-48-7	-	< 0.8	-	Ν	4,6-Dinitro-2-methylphenol	534-52-1	-	< 8.0	-	N
bis(2-Chloroisopropyl)ether	108-60-1	-	< 0.8	-	Ν	4-Nitroaniline	100-01-6	-	< 0.8	-	N
Hexachloroethane	67-72-1	-	< 0.8	-	Ν	N-Nitrosodiphenylamine	86-30-6 *	-	< 0.8	-	N
N-Nitroso-di-n-propylamine	621-64-7	-	< 0.8	-	N	4-Bromophenyl-phenylether	101-55-3	-	< 0.8	-	Ν
3- & 4-Methylphenol	108-39-4/106-44-5	-	< 3.0	-	Ν	Hexachlorobenzene	118-74-1	-	< 0.8	-	N
Nitrobenzene	98-95-3	-	< 0.8	-	Ν	Pentachlorophenol	87-86-5	-	< 8.0	-	N
Isophorone	78-59-1	-	< 0.8	-	Ν	Phenanthrene	85-01-8	9.28	1.2	98	N
2-Nitrophenol	88-75-5	-	< 3.0	-	Ν	Anthracene	120-12-7	-	< 0.3	-	N
2,4-Dimethylphenol	105-67-9	-	< 3.0	-	Ν	Di-n-butylphthalate	84-74-2	-	< 0.8	-	N
Benzoic Acid	65-85-0 *	-	< 16.0	-	Ν	Fluoranthene	206-44-0	11.01	2.0	87	N
bis(2-Chloroethoxy)methane	111-91-1	-	< 0.8	-	N	Pyrene	129-00-0	11.31	2.0	92	N
2,4-Dichlorophenol	120-83-2	-	< 3.0	-	N	Butylbenzylphthalate	85-68-7	-	< 0.8	-	N
1,2,4-Trichlorobenzene	120-82-1	-	< 0.8	-	N	Benzo[a]anthracene	56-55-3	13.19	0.5	89	N
Naphthalene	91-20-3	-	< 0.3	-	N	Chrysene	218-01-9	13.25	0.6	95	N
4-Chlorophenol	106-48-9	-	< 3.0	-	N	3,3'-Dichlorobenzidine	91-94-1	-	< 3.0	-	N
4-Chloroaniline	106-47-8 *	-	< 0.8	-	N	bis(2-Ethylhexyl)phthalate	117-81-7	-	< 0.8	-	N
Hexachlorobutadiene	87-68-3	-	< 0.8	-	N	Di-n-octylphthalate	117-84-0	-	< 0.3	-	N
4-Chloro-3-methylphenol	59-50-7	-	< 0.8	-	N	Benzo[b]fluoranthene	205-99-2	14.79	0.8	95	N
2-Methylnaphthalene	91-57-6	-	< 0.3	-	N	Benzo[k]fluoranthene	207-08-9	-	< 0.3	-	N
1-Methylnaphthalene	90-12-0	-	< 0.3	-	N	Benzo[a]pyrene	50-32-8	15.22	0.6	90	N
Hexachlorocyclopentadiene	77-47-4 *	-	< 0.8	-	N	Indeno[1,2,3-cd]pyrene	193-39-5	16.64	0.3	95	N
2,4,6-Trichlorophenol	88-06-2	-	< 3.0	-	N	Dibenzo[a,h]anthracene	53-70-3	-	< 0.3	-	N
2,4,5-Trichlorophenol	95-95-4	-	< 3.0	-	N	Benzo[g,h,i]perylene	191-24-2	16.91	0.3	97	N
2-Chloronaphthalene	91-58-7	-	< 0.3	-	N		"M" denotes that 9	% fit has been r	nanually interpreted		
Biphenyl	92-52-4	-	< 0.3	-	N			-			
Diphenyl ether	101-84-8	-	< 0.3	-	N	Internal Standards	% Area		Surrogates	% Rec	
2-Nitroaniline	88-74-4	-	< 0.8	-	N	1,4-Dichlorobenzene-d4	108		2-Fluorophenol	N.D	
Acenaphthylene	208-96-8	-	< 0.3	-	Ν	Naphthalene-d8	114	_	Phenol-d5	76	
Dimethylphthalate	131-11-3	-	< 0.8	-	N	Acenaphthene-d10	108		Nitrobenzene-d5	N.D	
2,6-Dinitrotoluene	606-20-2	-	< 0.8	-	Ν	Phenanthrene-d10	114	_	2-Fluorobiphenyl	72	
Acenaphthene	83-32-9	-	< 0.3	-	N	Chrysene-d12	110	1	2,4,6-Tribromophenol	79	
3-Nitroaniline	99-09-2	-	< 0.8	-	Ν	Pervlene-d12	102	1	Terphenyl-d14	70	

Concentrations are reported on a dry weight basis.

This analysis was conducted on an 'As Recieved' basis.

Semi-Volatile Organic Compounds

				Accr	redited?:	No					
Customer and Site Details: Sample Details: LIMS ID Number: Job Number:	RPS Consultants: / TP8F-012 1.2 CL0825214 S08_5458M	Awe Burghfiel	d Date Booked in: Date Extracted: Date Analysed:	27-Aug-08 03-Sep-08 07-Sep-08		Matrix: Ext Method: Operator: Directory/Quant File:	Soil Ultrasonic AB/SO 905SVOC_MS9\	0905CCC5.D	QC Batch Number: Multiplier: Dilution Factor: GPC (Y/N)	3137 0.2 1 N	
Target Compounds	CAS #	R.T. (min)	Concentration mg/kg	% Fit	Accr. code	Target Compounds	CAS #	R.T.	Concentration mg/kg	% Fit	Accr. code
Phenol	108-95-2	-	< 3.0	-	N	2,4-Dinitrophenol	51-28-5 *	-	< 1.0	-	N
bis(2-Chloroethyl)ether	111-44-4	-	< 0.7	-	Ν	Dibenzofuran	132-64-9	-	< 0.7	-	N
2-Chlorophenol	95-57-8	-	< 3.0	-	Ν	4-Nitrophenol	100-02-7	-	< 7.0	-	N
1,3-Dichlorobenzene	541-73-1	-	< 0.7	-	Ν	2,4-Dinitrotoluene	121-14-2	-	< 0.7	-	N
1,4-Dichlorobenzene	106-46-7	-	< 0.7	-	Ν	Fluorene	86-73-7	-	< 0.3	-	N
Benzyl alcohol	100-51-6	-	< 0.7	-	Ν	Diethylphthalate	84-66-2	-	< 0.7	-	Ν
1,2-Dichlorobenzene	95-50-1	-	< 0.7	-	Ν	4-Chlorophenyl-phenylether	7005-72-3	-	< 0.7	-	N
2-Methylphenol	95-48-7	-	< 0.7	-	Ν	4,6-Dinitro-2-methylphenol	534-52-1	-	< 7.0	-	N
bis(2-Chloroisopropyl)ether	108-60-1	-	< 0.7	-	Ν	4-Nitroaniline	100-01-6	-	< 0.7	-	N
Hexachloroethane	67-72-1	-	< 0.7	-	Ν	N-Nitrosodiphenylamine	86-30-6 *	-	< 0.7	-	N
N-Nitroso-di-n-propylamine	621-64-7	-	< 0.7	-	Ν	4-Bromophenyl-phenylether	101-55-3	-	< 0.7	-	N
3- & 4-Methylphenol	108-39-4/106-44-5	-	< 3.0	-	Ν	Hexachlorobenzene	118-74-1	-	< 0.7	-	N
Nitrobenzene	98-95-3	-	< 0.7	-	N	Pentachlorophenol	87-86-5	-	< 7.0	-	N
Isophorone	78-59-1	-	< 0.7	-	N	Phenanthrene	85-01-8	-	< 0.3	-	N
2-Nitrophenol	88-75-5	-	< 3.0	-	N	Anthracene	120-12-7	-	< 0.3	-	N
2,4-Dimethylphenol	105-67-9	-	< 3.0	-	N	Di-n-butylphthalate	84-74-2	-	< 0.7	-	N
Benzoic Acid	65-85-0 *	-	< 13.0	-	N	Fluoranthene	206-44-0	-	< 0.3	-	N
bis(2-Chloroethoxy)methane	111-91-1	-	< 0.7	-	N	Pyrene	129-00-0	-	< 0.3	-	N
2,4-Dichlorophenol	120-83-2	-	< 3.0	-	N	Butylbenzylphthalate	85-68-7	-	< 0.7	-	N
1,2,4-Trichlorobenzene	120-82-1	-	< 0.7	-	N	Benzo[a]anthracene	56-55-3	-	< 0.3	-	N
Naphthalene	91-20-3	-	< 0.3	-	N	Chrysene	218-01-9	-	< 0.3	-	N
4-Chlorophenol	106-48-9	-	< 3.0	-	N	3,3'-Dichlorobenzidine	91-94-1	-	< 3.0	-	N
4-Chloroaniline	106-47-8 *	-	< 0.7	-	N	bis(2-Ethylhexyl)phthalate	117-81-7	-	< 0.7	-	N
Hexachlorobutadiene	87-68-3	-	< 0.7	-	N	Di-n-octylphthalate	117-84-0	-	< 0.3	-	N
4-Chloro-3-methylphenol	59-50-7	-	< 0.7	-	N	Benzo[b]fluoranthene	205-99-2	-	< 0.3	-	N
2-Methylnaphthalene	91-57-6	-	< 0.3	-	N	Benzo[k]fluoranthene	207-08-9	-	< 0.3	-	N
1-Methylnaphthalene	90-12-0	-	< 0.3	-	N	Benzo[a]pyrene	50-32-8	-	< 0.3	-	N
Hexachlorocyclopentadiene	77-47-4 *	-	< 0.7	-	Ν	Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.3	-	N
2,4,6-Trichlorophenol	88-06-2	-	< 3.0	-	N	Dibenzo[a,h]anthracene	53-70-3	-	< 0.3	-	N
2,4,5-Trichlorophenol	95-95-4	-	< 3.0	-	N	Benzo[g,h,i]perylene	191-24-2	-	< 0.3	-	Ν
2-Chloronaphthalene	91-58-7	-	< 0.3	-	Ν		"M" denotes that %	6 fit has been r	manually interpreted		
Biphenyl	92-52-4	-	< 0.3	-	N			-			_
Diphenyl ether	101-84-8	-	< 0.3	-	N	Internal Standards	% Area		Surrogates	% Rec	
2-Nitroaniline	88-74-4	-	< 0.7	-	N	1,4-Dichlorobenzene-d4	97	-	2-Fluorophenol	N.D	_
Acenaphthylene	208-96-8	-	< 0.3	-	N	Naphthalene-d8	106	1	Phenol-d5	85	
Dimethylphthalate	131-11-3	-	< 0.7	-	N	Acenaphthene-d10	103	1	Nitrobenzene-d5	N.D	
2,6-Dinitrotoluene	606-20-2	-	< 0.7	-	Ν	Phenanthrene-d10	106	1	2-Fluorobiphenyl	78	
Acenaphthene	83-32-9	-	< 0.3	-	N	Chrysene-d12	105		2,4,6-Tribromophenol	69	
3-Nitroaniline	99-09-2	-	< 0.7	-	Ν	Pervlene-d12	106		Terphenyl-d14	87	

Concentrations are reported on a dry weight basis.

This analysis was conducted on an 'As Recieved' basis.

ALIPHATIC / AROMATIC FRACTION BY GC/FID

Customer and Site Details: Job Number: QC Batch Number:		RPS Consultants : Awe Burghfield Matrix: Soil										
		S08_5458		Separation:	Silica gel				Date Booked in	r 27-Aug-08		
		83127		Eluents:	Hexane, DCM				Date Extracted	02-Sep-08		
Directo	ry:	D:\TES\DATA\Y2008\0904TPH_GC7\096B5301.D Date Analysed: 05-Sep-08										
Method	:	Ultra Sonic						<u>a</u>				
			Concentration, (mg/kg) - as dry weight.									
This sample data is not accredited.			>C8 - C10		>C10 - C12		>C12 - C16		>C16 - C21		>C21 - C35	
	Sample ID	Client ID	Aliphatics	Aromatics	Aliphatics	Aromatics	Aliphatics	Aromatics	Aliphatics	Aromatics	Aliphatics	Aromatics
*	CL0825197	TP8F-007 0.0-0.6	<5	<5	<5	<5	<5	7.52	<5	<5	<11.70	<11.70
*	CL0825198	TP8F-016 0.2-0.4	<5	<5	<5	<5	<5	7.5	<5	<5	<11.06	<11.06
*	CL0825199	TP8F-005 0.1-0.3	<5	<5	<5	<5	<5	<5	<5	<5	<11.35	14.9
*	CL0825200	TP8F-006 0.1-0.3	<5	<5	<5	<5	<5	7.61	<5	<5	<11.38	<11.38
*	CL0825201	TP8F-010 0.0-0.8	<5	<5	<5	<5	<5	6.53	<5	<5	<11.02	<11.02
*	CL0825202	BH8F-002 0.6	<5	<5	<5	<5	<5	<5	<5	<5	<10.92	<10.92
*	CL0825203	BH8F-003 0.5-0.8	<5	<5	<5	<5	<5	4.95	<5	<5	<10.79	<10.79
*	CL0825204	TP8F-013 0.5-1.0	<5	<5	<5	<5	<5	<5	<5	<5	<10.80	<10.80
*	CL0825205	TP8F-001 0.75	<5	<5	<5	<5	<5	<5	<5	<5	<11.30	<11.30
*	CL0825206	TP8F-003 0.6	<5	<5	<5	<5	<5	<5	<5	<5	<10.38	<10.38
*	CL0825207	TP8F-008 1.1	<5	<5	<5	<5	<5	5.63	<5	<5	<10.53	<10.53
*	CL0825208	TP8F-002 0.6	<5	<5	<5	<5	<5	<5	<5	<5	<10.34	<10.34
*	CL0825209	TP8F-009 0.85	<5	<5	<5	<5	<5	<5	<5	<5	<11.29	<11.29
*	CL0825210	TP8F-004 0.0-1.0	<6	<6	<6	<6	<6	<6	<6	<6	<13.37	<13.37
*	CL0825211	TP8F-007 0.0-1.0	<5	<5	<5	<5	<5	<5	<5	<5	<11.47	12.6
*	CL0825212	TP8F-011 0.0-0.9	<5	<5	<5	<5	<5	5.71	<5	<5	<11.53	<11.53
*	CL0825213	TP8F-012 0.0-0.7	<6	<6	<6	<6	<6	6.74	<6	9.81	14.4	58.1
*	CL0825214	TP8F-012 1.2	<5	<5	<5	<5	<5	<5	<5	<5	<11.39	<11.39
*	CL0825215	TP8S-004 0.9	<5	<5	<5	<5	<5	5.89	<5	<5	<11.29	16.4
*	CL0825216	TP8F-014 0.85	<5	<5	<5	<5	<5	<5	<5	<5	<11.12	<11.12



Where individual results are flagged see report notes for for status. Results corrected to dry weight at 105℃ where appr opriate, in accordance with the MCERTS standard.

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Where individual results are flagged see report notes for for status.

Results corrected to dry weight at 105°C where appr opriate, in accordance with the MCERTS standard.



Where individual results are flagged see report notes for for status.

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Results corrected to dry weight at 105°C where appr opriate, in accordance with the MCERTS standard.



Where individual results are flagged see report notes for for status.

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Where individual results are flagged see report notes for for status.

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Results corrected to dry weight at 105℃ where appr opriate, in accordance with the MCERTS standard.



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Where individual results are flagged see report notes for for status.

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Results corrected to dry weight at 105°C where appr opriate, in accordance with the MCERTS standard.



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Where individual results are flagged see report notes for for status.

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Results corrected to dry weight at 105°C where appr opriate, in accordance with the MCERTS standard.



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Results corrected to dry weight at 105°C where appr opriate, in accordance with the MCERTS standard.



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Where individual results are flagged see report notes for for status.

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Results corrected to dry weight at 105℃ where appr opriate, in accordance with the MCERTS standard.



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Results corrected to dry weight at 105°C where appr opriate, in accordance with the MCERTS standard.

Volatile Organic Compounds by PTGCMS

				Acc	redited?:	Yes					
Customer and Site Details: Sample Details: LIMS ID Number: Job Number:	RPS Consultants: / TP8F-009 0.85 CL0825209 S08_5458M	Awe Burghfield				Directory/Quant file: Date Booked in: Date Analysed: Operator:	0909VOC.MS7\ 27-Aug-08 09-Sep-08 MK/PW	Initial Calibration	n Matrix: Method: Multiplier: Position:	Soil Purge & trap 5 19	
Target Compounds	CAS #	R.T. (min.)	Concentration	% Fit	Accr. code	Target Compounds	CAS #	R.T. (min.)	Concentration	% Fit	Accr
Dichlorodifluoromethane	75-71-8	-	< 6	-	UM	Styrene	100-42-5	-	< 6	-	UM
Chloromethane	74-87-3	-	< 6	-	UM	Bromoform	75-25-2	-	< 6	-	UM
Vinyl Chloride	75-01-4 *	-	< 6	-	N	iso-Propylbenzene	98-82-8	-	< 6	-	UM
Bromomethane	74-83-9 *	-	< 32	-	N	1.1.2.2-Tetrachloroethane	79-34-5	-	< 6	-	U
Chloroethane	75-00-3	-	< 32	-	UM	Propylbenzene	103-65-1	-	< 6	-	U
Trichlorofluoromethane	75-69-4	-	< 6	-	UM	Bromobenzene	108-86-1	-	< 6	-	UM
1.1-Dichloroethene	75-35-4	-	< 6	-	UM	1.2.3-Trichloropropane	96-18-4	-	< 6	-	U
trans 1,2-Dichloroethene	156-60-5	-	< 6	-	U	2-Chlorotoluene	95-49-8	-	< 6	-	UM
1.1-Dichloroethane	75-34-3	-	< 6	-	UM	1.3.5-Trimethylbenzene	108-67-8	-	< 6	-	UM
2,2-Dichloropropane	594-20-7	-	< 6	-	UM	4-Chlorotoluene	106-43-4	-	< 6	-	UM
cis 1,2-Dichloroethene	156-59-2	-	< 6	-	UM	tert-Butylbenzene	98-06-6	-	< 6	-	U
Bromochloromethane	74-97-5	-	< 6	-	UM	1,2,4-Trimethylbenzene	95-63-6	-	< 6	-	UM
Chloroform	67-66-3	-	< 6	-	UM	sec-Butylbenzene	135-98-8	-	< 6	-	UM
1,1,1-Trichloroethane	71-55-6	-	< 6	-	UM	p-lsopropyltoluene	99-87-6	-	< 6	-	U
Carbon Tetrachloride	56-23-5	-	< 6	-	UM	1,3-Dichlorobenzene	541-73-1	-	< 6	-	UM
1,1-Dichloropropene	563-58-6	-	< 6	-	UM	1,4-Dichlorobenzene	106-46-7	-	< 6	-	UM
Benzene	71-43-2	-	< 6	-	N	n-Butylbenzene	104-51-8	-	< 6	-	U
1,2-Dichloroethane	107-06-2	-	< 6	-	UM	1,2-Dichlorobenzene	95-50-1	-	< 6	-	UM
Trichloroethene	79-01-6	-	< 6	-	UM	1,2-Dibromo-3-chloropropane	96-12-8 *	-	< 32	-	N
1,2-Dichloropropane	78-87-5	-	< 6	-	UM	1,2,4-Trichlorobenzene	120-82-1	-	< 32	-	U
Dibromomethane	74-95-3	-	< 6	-	UM	Hexachlorobutadiene	87-68-3 *	-	< 32	-	N
Bromodichloromethane	75-27-4	-	< 6	-	UM	Naphthalene	91-20-3 *	-	< 32	-	N
cis 1,3-Dichloropropene	10061-01-5 *	-	< 6	-	N	1,2,3-Trichlorobenzene	87-61-6	-	< 32	-	UM
Toluene	108-88-3	-	< 6	-	Ν		Concentrations	are reported on a	dry weight basis		
trans 1,3-Dichloropropene	10061-02-6 *	-	< 6	-	N						
1,1,2-Trichloroethane	79-00-5	-	< 6	-	UM						
Tetrachloroethene	127-18-4	-	< 32	-	UM		"M" denotes that	% fit has been ma	inually interpreted		
1,3-Dichloropropane	142-28-9	-	< 6	-	UM						
Dibromochloromethane	124-48-1	-	< 6	-	UM	Internal standards	R.T.	Area %	Surrogates	% Rec	
1,2-Dibromoethane	106-93-4	-	< 6	-	U	Pentafluorobenzene	2.79	90 [Dibromofluoromethane	101	
Chlorobenzene	108-90-7	-	< 6	-	UM	1,4-Difluorobenzene	3.07	102	Foluene-d8	90	
Ethylbenzene	100-41-4	-	< 6	-	UM	Chlorobenzene-d5	4.08	84 E	Bromofluorobenzene	89	
1,1,1,2-Tetrachloroethane	630-20-6	-	< 6	-	UM	1,4-Dichlorobenzene-d4	4.85	82			-
m and p-Xylene	108-38-3/106-42-3	-	< 6	-	UM						
o-Xylene	95-47-6	-	< 6	-	UM	This analysis was conducted of	on an 'As Recieved	l' basis.			

Volatile Organic Compounds by PTGCMS

				Accr	edited?:	Yes					
Customer and Site Details: Sample Details: LIMS ID Number: Job Number:	RPS Consultants: A TP8F-012 0.0-0.7 CL0825213 S08_5458M	we Burghfield				Directory/Quant file: Date Booked in: Date Analysed: Operator:	0909VOC.MS7\ 27-Aug-08 09-Sep-08 MK/PW	Initial Calibration	n Matrix: Method: Multiplier: Position:	Soil Purge & trap 5 20	
Target Compounds	CAS #	R.T. (min.)	Concentration	% Fit	Accr.	Target Compounds	CAS #	R.T. (min.)	Concentration	% Fit	Accr
Dichlorodifluoromethane	75-71-8	-	< 8	-	UM	Styrene	100-42-5	-	< 8	-	UM
Chloromethane	74-87-3	-	< 8	-	UM	Bromoform	75-25-2	-	< 8	-	UM
Vinvl Chloride	75-01-4 *	-	< 8	-	N	iso-Propylbenzene	98-82-8	-	< 8	-	UM
Bromomethane	74-83-9 *	-	< 39	-	N	1.1.2.2-Tetrachloroethane	79-34-5	-	< 8	-	U
Chloroethane	75-00-3	-	< 39	-	UM	Propylbenzene	103-65-1	-	< 8	-	U
Trichlorofluoromethane	75-69-4	-	< 8	-	UM	Bromobenzene	108-86-1	-	< 8	-	UM
1.1-Dichloroethene	75-35-4	-	< 8	-	UM	1.2.3-Trichloropropane	96-18-4	-	< 8	-	U
trans 1,2-Dichloroethene	156-60-5	-	< 8	-	U	2-Chlorotoluene	95-49-8	-	< 8	-	UM
1,1-Dichloroethane	75-34-3	-	< 8	-	UM	1,3,5-Trimethylbenzene	108-67-8	-	< 8	-	UM
2,2-Dichloropropane	594-20-7	-	< 8	-	UM	4-Chlorotoluene	106-43-4	-	< 8	-	UM
cis 1,2-Dichloroethene	156-59-2	-	< 8	-	UM	tert-Butylbenzene	98-06-6	-	< 8	-	U
Bromochloromethane	74-97-5	-	< 8	-	UM	1,2,4-Trimethylbenzene	95-63-6	-	< 8	-	UM
Chloroform	67-66-3	-	< 8	-	UM	sec-Butylbenzene	135-98-8	-	< 8	-	UM
1,1,1-Trichloroethane	71-55-6	-	< 8	-	UM	p-Isopropyltoluene	99-87-6	-	< 8	-	U
Carbon Tetrachloride	56-23-5	-	< 8	-	UM	1,3-Dichlorobenzene	541-73-1	-	< 8	-	UM
1,1-Dichloropropene	563-58-6	-	< 8	-	UM	1,4-Dichlorobenzene	106-46-7	-	< 8	-	UM
Benzene	71-43-2	-	< 8	-	N	n-Butylbenzene	104-51-8	-	< 8	-	U
1,2-Dichloroethane	107-06-2	-	< 8	-	UM	1,2-Dichlorobenzene	95-50-1	-	< 8	-	UM
Trichloroethene	79-01-6	-	< 8	-	UM	1,2-Dibromo-3-chloropropane	96-12-8 *	-	< 39	-	N
1,2-Dichloropropane	78-87-5	-	< 8	-	UM	1,2,4-Trichlorobenzene	120-82-1	-	< 39	-	U
Dibromomethane	74-95-3	-	< 8	-	UM	Hexachlorobutadiene	87-68-3 *	-	< 39	-	N
Bromodichloromethane	75-27-4	-	< 8	-	UM	Naphthalene	91-20-3 *	-	< 39	-	N
cis 1,3-Dichloropropene	10061-01-5 *	-	< 8	-	N	1,2,3-Trichlorobenzene	87-61-6	-	< 39	-	UM
Toluene	108-88-3	-	< 8	-	Ν		Concentrations	are reported on a	dry weight basis		
trans 1,3-Dichloropropene	10061-02-6 *	-	< 8	-	Ν						
1,1,2-Trichloroethane	79-00-5	-	< 8	-	UM						
Tetrachloroethene	127-18-4	-	< 39	-	UM		"M" denotes that	% fit has been ma	anually interpreted		
1,3-Dichloropropane	142-28-9	-	< 8	-	UM						
Dibromochloromethane	124-48-1	-	< 8	-	UM	Internal standards	R.T.	Area %	Surrogates	% Rec	
1,2-Dibromoethane	106-93-4	-	< 8	-	U	Pentafluorobenzene	2.79	90	Dibromofluoromethane	102	
Chlorobenzene	108-90-7	-	< 8	-	UM	1,4-Difluorobenzene	3.07	99	Toluene-d8	83	
Ethylbenzene	100-41-4	-	< 8	-	UM	Chlorobenzene-d5	4.08	71	Bromofluorobenzene	82	
1,1,1,2-Tetrachloroethane	630-20-6	-	< 8	-	UM	1,4-Dichlorobenzene-d4	4.85	54			
m and p-Xylene	108-38-3/106-42-3	4.16	8	76	UM						
o-Xylene	95-47-6	-	< 8	-	UM	This analysis was conducted of	on an 'As Recieved	l' basis.			

Volatile Organic Compounds by PTGCMS

				Accr	redited?:	Yes					
Customer and Site Details: Sample Details: LIMS ID Number: Job Number:	RPS Consultants: <i>F</i> TP8F-012 1.2 CL0825214 S08_5458M	Awe Burghfield				Directory/Quant file: Date Booked in: Date Analysed: Operator:	0909VOC.MS7\ 27-Aug-08 09-Sep-08 MK/PW	Initial Calibration	Matrix: Method: Multiplier: Position:	Soil Purge & trap 5 23	
Target Compounds	CAS #	R.T. (min.)	Concentration	% Fit	Accr. code	Target Compounds	CAS #	R.T. (min.)	Concentration	% Fit	Acci
Dichlorodifluoromethane	75-71-8	-	< 7	-	UM	Styrene	100-42-5	-	< 7	-	UM
Chloromethane	74-87-3	-	<7	-	UM	Bromoform	75-25-2	-	< 7	-	UM
Vinvl Chloride	75-01-4 *	-	< 7	-	N	iso-Propylbenzene	98-82-8	-	< 7	-	UM
Bromomethane	74-83-9 *	-	< 33	-	N	1.1.2.2-Tetrachloroethane	79-34-5	-	< 7	-	U U
Chloroethane	75-00-3	-	< 33	-	UM	Propylbenzene	103-65-1	-	< 7	-	u
Trichlorofluoromethane	75-69-4	-	< 7	-	UM	Bromobenzene	108-86-1	-	< 7	-	UM
1.1-Dichloroethene	75-35-4	-	< 7	-	UM	1.2.3-Trichloropropane	96-18-4	-	< 7	-	U
trans 1,2-Dichloroethene	156-60-5	-	< 7	-	U	2-Chlorotoluene	95-49-8	-	< 7	-	UM
1.1-Dichloroethane	75-34-3	-	< 7	-	UM	1.3.5-Trimethylbenzene	108-67-8	-	< 7	-	UM
2,2-Dichloropropane	594-20-7	-	< 7	-	UM	4-Chlorotoluene	106-43-4	-	< 7	-	UM
cis 1,2-Dichloroethene	156-59-2	-	< 7	-	UM	tert-Butylbenzene	98-06-6	-	< 7	-	U
Bromochloromethane	74-97-5	-	< 7	-	UM	1,2,4-Trimethylbenzene	95-63-6	4.73	22	М	UM
Chloroform	67-66-3	-	< 7	-	UM	sec-Butylbenzene	135-98-8	-	< 7	-	UM
1,1,1-Trichloroethane	71-55-6	-	< 7	-	UM	p-Isopropyltoluene	99-87-6	4.83	8	62	U
Carbon Tetrachloride	56-23-5	-	< 7	-	UM	1,3-Dichlorobenzene	541-73-1	-	< 7	-	UM
1,1-Dichloropropene	563-58-6	-	< 7	-	UM	1,4-Dichlorobenzene	106-46-7	-	< 7	-	UM
Benzene	71-43-2	-	< 7	-	N	n-Butylbenzene	104-51-8	-	< 7	-	U
1,2-Dichloroethane	107-06-2	-	< 7	-	UM	1,2-Dichlorobenzene	95-50-1	-	< 7	-	UM
Trichloroethene	79-01-6	-	< 7	-	UM	1,2-Dibromo-3-chloropropane	96-12-8 *	-	< 33	-	N
1,2-Dichloropropane	78-87-5	-	< 7	-	UM	1,2,4-Trichlorobenzene	120-82-1	-	< 33	-	U
Dibromomethane	74-95-3	-	< 7	-	UM	Hexachlorobutadiene	87-68-3 *	-	< 33	-	N
Bromodichloromethane	75-27-4	-	< 7	-	UM	Naphthalene	91-20-3 *	-	< 33	-	N
cis 1,3-Dichloropropene	10061-01-5 *	-	< 7	-	N	1,2,3-Trichlorobenzene	87-61-6	-	< 33	-	UM
Toluene	108-88-3	-	< 7	-	Ν		Concentrations	are reported on a d	dry weight basis		
trans 1,3-Dichloropropene	10061-02-6 *	-	< 7	-	N						
1,1,2-Trichloroethane	79-00-5	-	< 7	-	UM						
Tetrachloroethene	127-18-4	-	< 33	-	UM		"M" denotes that	% fit has been ma	nually interpreted		
1,3-Dichloropropane	142-28-9	-	< 7	-	UM						
Dibromochloromethane	124-48-1	-	< 7	-	UM	Internal standards	R.T.	Area %	Surrogates	% Rec	
1,2-Dibromoethane	106-93-4	-	< 7	-	U	Pentafluorobenzene	2.79	86 D	ibromofluoromethane	114	
Chlorobenzene	108-90-7	-	< 7	-	UM	1,4-Difluorobenzene	3.07	98 T	oluene-d8	85	
Ethylbenzene	100-41-4	-	< 7	-	UM	Chlorobenzene-d5	4.08	72 B	romofluorobenzene	86	
1,1,1,2-Tetrachloroethane	630-20-6	-	< 7	-	UM	1,4-Dichlorobenzene-d4	4.85	61			
m and p-Xylene	108-38-3/106-42-3	4.16	9	72	UM						
o-Xylene	95-47-6	-	< 7	-	UM	This analysis was conducted of	on an 'As Recieved	' basis.			

Report Notes

Soil/Solid analysis specific:

S04 analysis not conducted in accordance with BS1377 unless otherwise stated Water Soluble Sulphate on 2:1 water:soil extract AR denotes analysis conducted on the As Received sample

Water analysis specific:

Results expressed as mg/l unless stated otherwise

Oil analysis specific:

Results expressed as mg/kg unless stated otherwise S.G. expressed as $g/cm^3@ 15^{\circ}C$

Filter analysis specific:

Results expressed as mg on filter unless stated otherwise

VOC analysis specific:

Explanatory notes for data flagging

- **U** = undetected above reporting limit
- J = concentration at instrument was below lowest calibration standard
- E = concentration at instrument was above top calibration standard
- **B** = compound was detected in method blank

Gas (Tedlar bag) analysis specific:

Results expressed as ug/l unless stated otherwise

Air (Carbon tube) analysis specific:

Results expressed as ug on tube unless stated otherwise

Asbestos analysis specific:

CH denotes Chrysotile CR denotes Crocidolite AM denotes Amosite NADIS denotes No Asbestos Detected in Sample NBFO denotes No Bulk fibres Observed

General notes:

^ this analysis was subcontracted to another laboratory

\$ Within laboratory tolerances

\$\$ unable to analyse due to nature of sample

¥ Results for guidance only, possible interference

& Blank corrected

I.S insufficient sample for analysis

Intf Unable to analyse due to interferences

N.D Not determined

N.R Not recorded

N.Det Not detected

Req Analysis Requested, see attached sheets for results

P Raised detection limit due to nature of sample

* denotes that all accreditation has been removed by the laboratory for this result.

‡ denotes that Mcerts accreditation has been removed by the laboratory for this result.

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory

may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected.

If you require further details of the circumstances leading to the removal of the accreditation from any data item please do not hesitate to contact the laboratory



TEST REPORT SOIL SAMPLE ANALYSIS

TES Report No. EFS/085478 (Ver. 1)

RPS Group Plc St Annes House Oxford Square Oxford Street Newbury

Site: Awe Burghfield

The 1 sample described in this report were logged for analysis by TES Bretby on 27-Aug-2008. The analysis was completed by: 17-Sep-2008

The following tables are contained in this report:

Table 1 Main Analysis Results (Page 2) Table of Report Notes (Page 3)

On behalf of TES Bretby : J Hannah

J. Hannah Project Co-ordinator

Date of Issue: 17-Sep-2008

Tests marked '^' have been subcontracted to another laboratory.

TES Bretby accepts no responsibility for any sampling not carried out by our personnel.

r	11 X	1											
	Units :												[
	Method Codes :	SEN9 Suc	002										
	Method Reporting Limits :												i
TES ID Number CL/	Client Sample Description	Asbestos (screening)											
-													
0826021	TP8F-015 0.3	С	H										
													l
													I
	TES Bretby	Client Name		RPS Consultan	its				Soils Sa	ample /	Analysis	TE	ES I
	PO Box 100, Bretby Business Park,	Contact		Mr G Moore						1			
	Burton-on-Trent, Staffordshire, DE15 0XD								Date Printed		17-Sep-08		the
	Tel +44 (0) 1283 554400								Poport Number		EE6/005/70	Bre	loy
	1 CI T T T (U) 1203 334400			Awe	Bura	hfield	ed EF5/085478						
	Fax +44 (0) 1283 554422			/					Table Number		1	Ļ	

Report Notes

Soil/Solid analysis specific:

Results expressed as mg/kg on an air dried basis unless stated otherwise S04 analysis not conducted in accordance with BS1377 unless otherwise stated Water Soluble Sulphate on 2:1 water:soil extract AR denotes analysis conducted on the As Received sample

Water analysis specific:

Results expressed as mg/l unless stated otherwise

Oil analysis specific:

Results expressed as mg/kg unless stated otherwise S.G. expressed as $g/cm^3@ 15^{\circ}C$

Filter analysis specific:

Results expressed as mg on filter unless stated otherwise

VOC analysis specific:

Explanatory notes for data flagging

- **U** = undetected above reporting limit
- \mathbf{J} = concentration at instrument was below lowest calibration standard
- E = concentration at instrument was above top calibration standard
- **B** = compound was detected in method blank

Gas (Tedlar bag) analysis specific:

Results expressed as ug/l unless stated otherwise

Air (Carbon tube) analysis specific:

Results expressed as ug on tube unless stated otherwise

Asbestos analysis specific:

CH denotes Chrysotile CR denotes Crocidolite AM denotes Amosite NADIS denotes No Asbestos Detected in Sample NBFO denotes No Bulk fibres Observed

General notes:

^ this analysis was subcontracted to another laboratory

\$ Within laboratory tolerances

\$\$ unable to analyse due to nature of sample

¥ Results for guidance only, possible interference

& Blank corrected

I.S insufficient sample for analysis

Intf Unable to analyse due to interferences

N.D Not determined

N.R Not recorded

N.Det Not detected

Req Analysis Requested, see attached sheets for results

P Raised detection limit due to nature of sample

* denotes that all accreditation has been removed by the laboratory for this result.

‡ denotes that Mcerts accreditation has been removed by the laboratory for this result.

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory

may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected.

If you require further details of the circumstances leading to the removal of the accreditation from any data item please do not hesitate to contact the laboratory



TEST REPORT SOIL SAMPLE ANALYSIS



TES Report No. EFS/085506M (Ver. 3)

RPS Group Plc St Annes House **Oxford Square** Oxford Street Newbury

Site: Awe Burghfield

The 9 samples described in this report were logged for analysis by TES Bretby on 28-Aug-2008. The analysis was completed by: 18-Sep-2008

Tests where the accreditation is set to N or No, and any individual data items marked with a * are not UKAS or MCERTS accredited Any opinions or interpretations expressed herein are outside the scope of any UKAS accreditation held by TES Bretby Laboratories.

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 3) Table of PAH (MS-SIM) (80) Results (Pages 4 to 14) Table of TPH (Si) banding (std) (Page 15) GC-FID Chromatograms (Pages 16 to 37) Table of Report Notes (Page 38)

On behalf of TES Bretby : J Hannah

J. Hannah

Project Co-ordinator

Date of Issue: 22-Sep-2008

Accreditation Codes: N (Not Accredited), U (UKAS), UM (UKAS & MCERTS) Tests marked '^' have been subcontracted to another laboratory. (NVM) - denotes the sample matrix is dissimilar to matrices upon which the MCERTS validation was based, and is therefore not accredited for MCERTS. All results are reported on a dry weight basis at 105°C unless otherwise stated. (except QC samples) TES Bretby accepts no responsibility for any sampling not carried out by our personnel.

Sample Descriptions

Client : RPS Consultants

Site : Awe Burghfield

Report Number : S08_5506M

Lab ID Number	Client ID	Description
CL/0825413	HP8S-004 0.0-1.2	Brown CLAY
CL/0825414	BH8S-001 1.0-1.5	Brown CLAY
CL/0825415	BH8S-002 1.5	Brown CLAY
CL/0825416	HP8S-003 0.8	Brown CLAY
CL/0825417	HP8S-002 0.6	Brown Stone CLAY
CL/0825418	TP8S-001 1.1	Brown CLAY
CL/0825419	TP8S-003 1.1	Brown CLAY
CL/0825420	TP8S-002 1.0	Brown Stone CLAY
-		
-		
CL/0825423	TP8F-015 0.3-0.6	Brown CLAY

	Units :	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	mg/kg	pH Units		
	Method Codes :	ICPACIDS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	TMSS	TPHUSSI	WSLM3		
	Method Reporting Limits : Accreditation Code:	20 LIM	2	0.1	3	3	3.5 LIM	0.10	2.5 LIM	0.5	2.0	19.5	0.2	10.0	11		
TES ID Number CL/	Client Sample Description	SO4 (acid sol)	Arsenic (MS)	Cadmium (MS)	Chromium (MS)	Copper (MS)	Lead (MS)	Mercury (MS)	Nickel (MS)	Selenium (MS)	Vanadium (MS)	Zinc (MS)	Tot. Moisture @ 105C	TPH by GCFID (AR/Si)	pH units		
-		126	<u> </u>	0.12	20.6+	14.0	16.2	-0.1	22.5	-0.5	15.9	56	17.2	Pog	0.2		
0025417		247	0.9	0.13	29.04	14.9	10.2	-0.1	23.5	<0.5	45.0	70	21.0	Req	0.2		
0825416		347	8.2	0.14	30.91	17.7	18	<0.1	24.8	<0.5	45	70	21.9	Req	8.8		-
0825413	HP85-004 0.0-1.2	<21	8.1	0.19	30.0‡	15.7	15.3	<0.1	27.9	<0.5	44.1	60	21.1	Req	7.9		-
0825414	BH85-001 1.0-1.5	08	11	0.13	37.1‡	20.2	15.9	<0.1	26.8	0.8	53.6	62.7	20.8	Req	7.9		-
0825415	BH8S-002 1.5	228	10.1	0.13	31‡	22.8	16.8	<0.1	35	<0.5	44.5	66	19.2	Req	8.8		
0825418	TP8S-001 1.1	108	10.2	0.17	37.4‡	23	18.2	<0.1	42.5	<0.5	56.3	70.7	22.8	Req	8.0		
0825420	TP8S-002 1.0	152	8.3	<0.1	26‡	12.7	13.3	<0.1	18.1	<0.5	39.8	46.1	16.2	Req	8.0		
0825419	TP8S-003 1.1	2050	11	0.17	38.1‡	24.9	18.2	<0.1	39	0.7	54.7	75.5	21.6	Req	7.8		
0825423	TP8F-015 0.3-0.6	647	9.2	0.32	19.1‡	25.5	37.7	<0.1	20.2	<0.5	34	86.2	12.0	Req	8.5		
	TES Bretby	Client Na	ime	RPS Co	onsultant	ts						Soils Sa	ample	Analysi	S	TE	ES
	Burton-on-Trent, Staffordshire, DE15 0XD Tel +44 (0) 1283 554400 Fax +44 (0) 1283 554422	Contact			Awe	Burgl	nfield			Date Printed22-Sep-08Report NumberEFS/085506MTable Number1			Bre	tby			

	Units :	ma/ka	ma/ka	ma/ka	ma/ka	ma/ka		ma/ka	% M/M							
	Method Codes :	ICPBOR	ICPMAJ	ICPMAJ	KONECL	PAHMSUS	SEN9	SFAS	WSLM59							
	Method Reporting Limits :	0.5	1	1	5.0	0.08		0.5	0.02							
	Accreditation Code:	N	N	N	N		Ν	N	N							
TES ID Number CL/	Client Sample Description	Boron (H20 Soluble)	Barium	Beryllium	Chloride:	PAH by MS.17(0.08)	Asbestos (screening)	Sulphide as S (AR)	F.O.C. %							
-		1	15.6	-1	14.7	Pog	NREO	-0.6	0.28							
0020417			10.0	<1	14.7	Rey		<0.0	0.30							
0825416	HP8S-003 0.8	1	29.8	<1	22	Req	NBFO	<0.6	1.44							<u> </u>
0825413	HP8S-004 0.0-1.2	1.3	12.7	<1	23	Req	NBFO	<0.6	0.27							
0825414	BH8S-001 1.0-1.5	0.8	<1	<1	51	Req	NBFO	<0.6	0.26							
0825415	BH8S-002 1.5	1	<1	<1	27	Req	NBFO	<0.6	0.28							ļ
0825418	TP8S-001 1.1	1.2	16.1	<1	20	Req	NBFO	<0.6	0.34							
0825420	TP8S-002 1.0	1	<1	<1	21	Req	NBFO	<0.6	0.36							
0825419	TP8S-003 1.1	1.6	<1	<1	35	Req	NBFO	<0.6	0.28							
0825423	TP8F-015 0.3-0.6	0.6	61.1	<1	9.8	Req	NBFO	<0.6	1.3							1
	TES Bretby	Client N	ame	RPS Co	onsultant	ts					Soils Sa	ample	Analysi	s	TE	ES I
	РО вох тоо, Bretby Business Park, Burton-on-Trent, Staffordshire, DE15 0XD Tel +44 (0) 1283 554400 Fax +44 (0) 1283 554422	Contact			Awe	Burgh	nfield			Date Prin Report N Table Nu	nted Jumber umber		EF	22-Sep-08 S/085506M 1	Bre	tby

Customer and Site Details:
Sample Details:
LIMS ID Number:
QC Batch Number:
Quantitation File:
Directory:
Dilution:

RPS Consultants: Awe BurghfieldHP8S-004 0.0-1.2Job NCL0825413Date E3263Date EInitial CalibrationDate A0914VOC.MS6\Matrix1.0Ext Matrix

Job Number:S0Job Rumber:S0Date Booked in:28Date Extracted:12Date Analysed:15Matrix:S0Ext Method:UI

S08_5506M 28-Aug-08 12-Sep-08 15-Sep-08 Soil Ultrasonic

Accredited?: Yes

Target Compounds	CAS #	R.T.	Concentration	% Fit	Accr.
		(min)	mg/kg		code
Naphthalene	91-20-3	-	< 0.10	-	UM
Acenaphthylene	208-96-8	-	< 0.10	-	U
Acenaphthene	83-32-9	-	< 0.10	-	UM
Fluorene	86-73-7	-	< 0.10	-	UM
Phenanthrene	85-01-8	-	< 0.10	-	UM
Anthracene	120-12-7	-	< 0.10	-	U
Fluoranthene	206-44-0	-	< 0.10	-	UM
Pyrene	129-00-0	-	< 0.10	-	UM
Benzo[a]anthracene	56-55-3	-	< 0.10	-	UM
Chrysene	218-01-9	-	< 0.10	-	UM
Benzo[b]fluoranthene	205-99-2	-	< 0.10	-	UM
Benzo[k]fluoranthene	207-08-9	-	< 0.10	-	UM
Benzo[a]pyrene	50-32-8	-	< 0.10	-	UM
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.10	-	UM
Dibenzo[a,h]anthracene	53-70-3	-	< 0.10	-	UM
Benzo[g,h,i]perylene	191-24-2	-	< 0.10	-	UM
Coronene	191-07-1 *	-	< 0.10	-	N
Total (USEPA16) PAHs	-	-	< 1.62	-	Ν

* Denotes compound is not UKAS accredited

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	111
Acenaphthene-d10	96
Phenanthrene-d10	94
Chrysene-d12	87
Perylene-d12	78

Surrogates	% Rec
Nitrobenzene-d5	N.D
2-Fluorobiphenyl	89
Terphenyl-d14	109

Concentrations are reported on a dry weight basis.

Customer and Site Details:
Sample Details:
LIMS ID Number:
QC Batch Number:
Quantitation File:
Directory:
Dilution:

RPS Consultants: Awe BurghfieldBH8S-001 1.0-1.5Job NCL0825414Date E3263Date EInitial CalibrationDate A0914VOC.MS6\Matrix1.0Ext Matrix

Job Number:S0Date Booked in:28Date Extracted:12Date Analysed:15Matrix:SoExt Method:Ult

S08_5506M 28-Aug-08 12-Sep-08 15-Sep-08 Soil Ultrasonic

Accredited?: Yes

Target Compounds	CAS #	R.T.	Concentration	% Fit	Accr.
		(min)	mg/kg		code
Naphthalene	91-20-3	-	< 0.10	-	UM
Acenaphthylene	208-96-8	-	< 0.10	-	U
Acenaphthene	83-32-9	-	< 0.10	-	UM
Fluorene	86-73-7	-	< 0.10	-	UM
Phenanthrene	85-01-8	-	< 0.10	-	UM
Anthracene	120-12-7	-	< 0.10	-	U
Fluoranthene	206-44-0	-	< 0.10	-	UM
Pyrene	129-00-0	-	< 0.10	-	UM
Benzo[a]anthracene	56-55-3	-	< 0.10	-	UM
Chrysene	218-01-9	-	< 0.10	-	UM
Benzo[b]fluoranthene	205-99-2	-	< 0.10	-	UM
Benzo[k]fluoranthene	207-08-9	-	< 0.10	-	UM
Benzo[a]pyrene	50-32-8	-	< 0.10	-	UM
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.10	-	UM
Dibenzo[a,h]anthracene	53-70-3	-	< 0.10	-	UM
Benzo[g,h,i]perylene	191-24-2	-	< 0.10	-	UM
Coronene	191-07-1 *	-	< 0.10	-	N
Total (USEPA16) PAHs	-	-	< 1.62	-	N

* Denotes compound is not UKAS accredited

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	121
Acenaphthene-d10	106
Phenanthrene-d10	104
Chrysene-d12	92
Perylene-d12	85

Surrogates	% Rec
Nitrobenzene-d5	N.D
2-Fluorobiphenyl	85
Terphenyl-d14	101

Concentrations are reported on a dry weight basis.

Customer and Site Details:
Sample Details:
LIMS ID Number:
QC Batch Number:
Quantitation File:
Directory:
Dilution:

RPS Consultants: Awe BurghfieldBH8S-002 1.5Job NCL0825415Date E3263Date EInitial CalibrationDate A0914VOC.MS6\Matrix1.0Ext Matrix

Job Number:SiJob Number:28Date Booked in:28Date Extracted:12Date Analysed:15Matrix:SiExt Method:U

S08_5506M 28-Aug-08 12-Sep-08 15-Sep-08 Soil Ultrasonic

Accredited?: Yes

Target Compounds	CAS #	R.T.	Concentration	% Fit	Accr.
		(min)	mg/kg		code
Naphthalene	91-20-3	-	< 0.10	-	UM
Acenaphthylene	208-96-8	-	< 0.10	-	U
Acenaphthene	83-32-9	-	< 0.10	-	UM
Fluorene	86-73-7	-	< 0.10	-	UM
Phenanthrene	85-01-8	-	< 0.10	-	UM
Anthracene	120-12-7	-	< 0.10	-	U
Fluoranthene	206-44-0	-	< 0.10	-	UM
Pyrene	129-00-0	-	< 0.10	-	UM
Benzo[a]anthracene	56-55-3	-	< 0.10	-	UM
Chrysene	218-01-9	-	< 0.10	-	UM
Benzo[b]fluoranthene	205-99-2	-	< 0.10	-	UM
Benzo[k]fluoranthene	207-08-9	-	< 0.10	-	UM
Benzo[a]pyrene	50-32-8	-	< 0.10	-	UM
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.10	-	UM
Dibenzo[a,h]anthracene	53-70-3	-	< 0.10	-	UM
Benzo[g,h,i]perylene	191-24-2	-	< 0.10	-	UM
Coronene	191-07-1 *	-	< 0.10	-	N
Total (USEPA16) PAHs	-	-	< 1.58	-	N

* Denotes compound is not UKAS accredited

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	115
Acenaphthene-d10	101
Phenanthrene-d10	98
Chrysene-d12	87
Perylene-d12	84

Surrogates	% Rec
Nitrobenzene-d5	N.D
2-Fluorobiphenyl	87
Terphenyl-d14	104

Concentrations are reported on a dry weight basis.

Customer and Site Details:
Sample Details:
LIMS ID Number:
QC Batch Number:
Quantitation File:
Directory:
Dilution:

RPS Consultants: Awe BurghfieldHP8S-003 0.8Job NCL0825416Date E3263Date EInitial CalibrationDate A0914VOC.MS6\Matrix1.0Ext Matrix

Job Number:S0Job Rumber:S0Date Booked in:28Date Extracted:12Date Analysed:15Matrix:S0Ext Method:Ultiplication

S08_5506M 28-Aug-08 12-Sep-08 15-Sep-08 Soil Ultrasonic

Accredited?: Yes

Target Compounds	CAS #	R.T.	Concentration	% Fit	Accr.
		(min)	mg/kg		code
Naphthalene	91-20-3	-	< 0.10	-	UM
Acenaphthylene	208-96-8	-	< 0.10	-	U
Acenaphthene	83-32-9	-	< 0.10	-	UM
Fluorene	86-73-7	-	< 0.10	-	UM
Phenanthrene	85-01-8	5.41	0.23	100	UM
Anthracene	120-12-7	-	< 0.10	-	U
Fluoranthene	206-44-0	7.08	0.40	83	UM
Pyrene	129-00-0	7.38	0.30	84	UM
Benzo[a]anthracene	56-55-3	-	< 0.10	-	UM
Chrysene	218-01-9	-	< 0.10	-	UM
Benzo[b]fluoranthene	205-99-2	-	< 0.10	-	UM
Benzo[k]fluoranthene	207-08-9	-	< 0.10	-	UM
Benzo[a]pyrene	50-32-8	-	< 0.10	-	UM
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.10	-	UM
Dibenzo[a,h]anthracene	53-70-3	-	< 0.10	-	UM
Benzo[g,h,i]perylene	191-24-2	-	< 0.10	-	UM
Coronene	191-07-1 *	-	< 0.10	-	N
Total (USEPA16) PAHs	-	-	< 2.22	-	Ν

* Denotes compound is not UKAS accredited

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	113
Acenaphthene-d10	98
Phenanthrene-d10	98
Chrysene-d12	91
Perylene-d12	85

Surrogates	% Rec
Nitrobenzene-d5	N.D
2-Fluorobiphenyl	89
Terphenyl-d14	103

Concentrations are reported on a dry weight basis.

Customer and Site Details:
Sample Details:
LIMS ID Number:
QC Batch Number:
Quantitation File:
Directory:
Dilution:

RPS Consultants: Awe BurghfieldHP8S-002 0.6Job NCL0825417Date E3263Date EInitial CalibrationDate A0914VOC.MS6\Matrix1.0Ext Matrix

Job Number:SoJob Number:SoDate Booked in:28Date Extracted:12Date Analysed:15Matrix:SoExt Method:U

S08_5506M 28-Aug-08 12-Sep-08 15-Sep-08 Soil Ultrasonic

Accredited?: Yes

Target Compounds	CAS #	R.T.	Concentration	% Fit	Accr.
		(min)	mg/kg		code
Naphthalene	91-20-3	-	< 0.10	-	UM
Acenaphthylene	208-96-8	-	< 0.10	-	U
Acenaphthene	83-32-9	-	< 0.10	-	UM
Fluorene	86-73-7	-	< 0.10	-	UM
Phenanthrene	85-01-8	-	< 0.10	-	UM
Anthracene	120-12-7	-	< 0.10	-	U
Fluoranthene	206-44-0	-	< 0.10	-	UM
Pyrene	129-00-0	-	< 0.10	-	UM
Benzo[a]anthracene	56-55-3	-	< 0.10	-	UM
Chrysene	218-01-9	-	< 0.10	-	UM
Benzo[b]fluoranthene	205-99-2	-	< 0.10	-	UM
Benzo[k]fluoranthene	207-08-9	-	< 0.10	-	UM
Benzo[a]pyrene	50-32-8	-	< 0.10	-	UM
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.10	-	UM
Dibenzo[a,h]anthracene	53-70-3	-	< 0.10	-	UM
Benzo[g,h,i]perylene	191-24-2	-	< 0.10	-	UM
Coronene	191-07-1 *	-	< 0.10	-	N
Total (USEPA16) PAHs	-	-	< 1.55	-	N

* Denotes compound is not UKAS accredited

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	105
Acenaphthene-d10	92
Phenanthrene-d10	88
Chrysene-d12	85
Perylene-d12	80

Surrogates	% Rec
Nitrobenzene-d5	N.D
2-Fluorobiphenyl	88
Terphenyl-d14	103

Concentrations are reported on a dry weight basis.

Customer and Site	Details:
Sample Details:	
LIMS ID Number:	
QC Batch Number:	
Quantitation File:	
Directory:	
Dilution:	

RPS Consultants: Awe BurghfieldTP8S-001 1.1Job NCL0825418Date E3263Date EInitial CalibrationDate A0914VOC.MS6\Matrix1.0Ext Matrix

Job Number:SCJob Rumber:SCDate Booked in:28Date Extracted:12Date Analysed:15Matrix:SCExt Method:Ultimate

S08_5506M 28-Aug-08 12-Sep-08 15-Sep-08 Soil Ultrasonic

Accredited?: Yes

Target Compounds	CAS #	R.T.	Concentration	% Fit	Accr.
		(min)	mg/kg		code
Naphthalene	91-20-3	-	< 0.10	-	UM
Acenaphthylene	208-96-8	-	< 0.10	-	U
Acenaphthene	83-32-9	-	< 0.10	-	UM
Fluorene	86-73-7	-	< 0.10	-	UM
Phenanthrene	85-01-8	-	< 0.10	-	UM
Anthracene	120-12-7	-	< 0.10	-	U
Fluoranthene	206-44-0	-	< 0.10	-	UM
Pyrene	129-00-0	-	< 0.10	-	UM
Benzo[a]anthracene	56-55-3	-	< 0.10	-	UM
Chrysene	218-01-9	-	< 0.10	-	UM
Benzo[b]fluoranthene	205-99-2	-	< 0.10	-	UM
Benzo[k]fluoranthene	207-08-9	-	< 0.10	-	UM
Benzo[a]pyrene	50-32-8	-	< 0.10	-	UM
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.10	-	UM
Dibenzo[a,h]anthracene	53-70-3	-	< 0.10	-	UM
Benzo[g,h,i]perylene	191-24-2	-	< 0.10	-	UM
Coronene	191-07-1 *	-	< 0.10	-	N
Total (USEPA16) PAHs	-	-	< 1.66	-	N

* Denotes compound is not UKAS accredited

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	117
Acenaphthene-d10	103
Phenanthrene-d10	100
Chrysene-d12	89
Perylene-d12	81

Surrogates	% Rec
Nitrobenzene-d5	N.D
2-Fluorobiphenyl	86
Terphenyl-d14	103

Concentrations are reported on a dry weight basis.

Customer and Site	Details:
Sample Details:	
LIMS ID Number:	
QC Batch Number:	
Quantitation File:	
Directory:	
Dilution:	

RPS Consultants: Awe BurghfieldTP8S-003 1.1Job NCL0825419Date E3263Date EInitial CalibrationDate A0914VOC.MS6\Matrix1.0Ext Matrix

Job Number:S0Date Booked in:28Date Extracted:12Date Analysed:15Matrix:S0Ext Method:Ultiplication

S08_5506M 28-Aug-08 12-Sep-08 15-Sep-08 Soil Ultrasonic

Accredited?: Yes

Target Compounds	CAS #	R.T.	Concentration	% Fit	Accr.
		(min)	mg/kg		code
Naphthalene	91-20-3	-	< 0.10	-	UM
Acenaphthylene	208-96-8	-	< 0.10	-	U
Acenaphthene	83-32-9	-	< 0.10	-	UM
Fluorene	86-73-7	-	< 0.10	-	UM
Phenanthrene	85-01-8	-	< 0.10	-	UM
Anthracene	120-12-7	-	< 0.10	-	U
Fluoranthene	206-44-0	-	< 0.10	-	UM
Pyrene	129-00-0	-	< 0.10	-	UM
Benzo[a]anthracene	56-55-3	-	< 0.10	-	UM
Chrysene	218-01-9	-	< 0.10	-	UM
Benzo[b]fluoranthene	205-99-2	-	< 0.10	-	UM
Benzo[k]fluoranthene	207-08-9	-	< 0.10	-	UM
Benzo[a]pyrene	50-32-8	-	< 0.10	-	UM
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.10	-	UM
Dibenzo[a,h]anthracene	53-70-3	-	< 0.10	-	UM
Benzo[g,h,i]perylene	191-24-2	-	< 0.10	-	UM
Coronene	191-07-1 *	-	< 0.10	-	N
Total (USEPA16) PAHs	-	-	< 1.63	-	N

* Denotes compound is not UKAS accredited

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	108
Acenaphthene-d10	95
Phenanthrene-d10	91
Chrysene-d12	74
Perylene-d12	71

Surrogates	% Rec
Nitrobenzene-d5	N.D
2-Fluorobiphenyl	86
Terphenyl-d14	110

Concentrations are reported on a dry weight basis.

Customer and Site Details:
Sample Details:
LIMS ID Number:
QC Batch Number:
Quantitation File:
Directory:
Dilution:

RPS Consultants: Awe BurghfieldTP8S-002 1.0Job NCL0825420Date E3263Date EInitial CalibrationDate A0914VOC.MS6\Matrix1.0Ext Matrix

Job Number:SiDate Booked in:28Date Extracted:12Date Analysed:18Matrix:SiExt Method:U

S08_5506M 28-Aug-08 12-Sep-08 15-Sep-08 Soil Ultrasonic

Accredited?: Yes

Target Compounds	CAS #	R.T.	Concentration	% Fit	Accr.
		(min)	mg/kg		code
Naphthalene	91-20-3	-	< 0.10	-	UM
Acenaphthylene	208-96-8	-	< 0.10	-	U
Acenaphthene	83-32-9	-	< 0.10	-	UM
Fluorene	86-73-7	-	< 0.10	-	UM
Phenanthrene	85-01-8	-	< 0.10	-	UM
Anthracene	120-12-7	-	< 0.10	-	U
Fluoranthene	206-44-0	-	< 0.10	-	UM
Pyrene	129-00-0	-	< 0.10	-	UM
Benzo[a]anthracene	56-55-3	-	< 0.10	-	UM
Chrysene	218-01-9	-	< 0.10	-	UM
Benzo[b]fluoranthene	205-99-2	-	< 0.10	-	UM
Benzo[k]fluoranthene	207-08-9	-	< 0.10	-	UM
Benzo[a]pyrene	50-32-8	-	< 0.10	-	UM
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.10	-	UM
Dibenzo[a,h]anthracene	53-70-3	-	< 0.10	-	UM
Benzo[g,h,i]perylene	191-24-2	-	< 0.10	-	UM
Coronene	191-07-1 *	-	< 0.10	-	N
Total (USEPA16) PAHs	-	-	< 1.53	-	N

* Denotes compound is not UKAS accredited

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	117
Acenaphthene-d10	103
Phenanthrene-d10	98
Chrysene-d12	88
Perylene-d12	82

Surrogates	% Rec
Nitrobenzene-d5	N.D
2-Fluorobiphenyl	84
Terphenyl-d14	101

Concentrations are reported on a dry weight basis.

Customer and Site	Details:
Sample Details:	
LIMS ID Number:	
QC Batch Number:	
Quantitation File:	
Directory:	
Dilution:	

RPS Consultants: Awe BurghfieldTP8F-015 0.3-0.6Job NCL0825423Date E3263Date EInitial CalibrationDate A0914VOC.MS6\Matrix1.0Ext Matrix

Job Number: SC Date Booked in: 28 Date Extracted: 12 Date Analysed: 15 Matrix: SC Ext Method: UI

S08_5506M 28-Aug-08 12-Sep-08 15-Sep-08 Soil Ultrasonic

Accredited?: Yes

Target Compounds	CAS #	R.T.	Concentration	% Fit	Accr.
		(min)	mg/kg		code
Naphthalene	91-20-3	-	< 0.09	-	UM
Acenaphthylene	208-96-8	-	< 0.09	-	U
Acenaphthene	83-32-9	-	< 0.09	-	UM
Fluorene	86-73-7	-	< 0.09	-	UM
Phenanthrene	85-01-8	5.41	0.16	98	UM
Anthracene	120-12-7	-	< 0.09	-	U
Fluoranthene	206-44-0	7.08	0.65	84	UM
Pyrene	129-00-0	7.38	0.49	83	UM
Benzo[a]anthracene	56-55-3	9.23	0.30	55	UM
Chrysene	218-01-9	9.28	0.39	99	UM
Benzo[b]fluoranthene	205-99-2	10.80	0.27	91	UM
Benzo[k]fluoranthene	207-08-9	10.82	0.26	93	UM
Benzo[a]pyrene	50-32-8	11.21	0.30	92	UM
Indeno[1,2,3-cd]pyrene	193-39-5	12.58	0.22	63	UM
Dibenzo[a,h]anthracene	53-70-3	-	< 0.09	-	UM
Benzo[g,h,i]perylene	191-24-2	12.85	0.17	53	UM
Coronene	191-07-1 *	-	< 0.09	-	N
Total (USEPA16) PAHs	-	-	< 3.83	-	N

* Denotes compound is not UKAS accredited

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	115
Acenaphthene-d10	101
Phenanthrene-d10	100
Chrysene-d12	90
Perylene-d12	83

Surrogates	% Rec
Nitrobenzene-d5	N.D
2-Fluorobiphenyl	81
Terphenyl-d14	94

Concentrations are reported on a dry weight basis.

ALIPHATIC / AROMATIC FRACTION BY GC/FID

Custor	ner and Site Details:	RPS Consultants : Awe E	Burghfield						Matrix:	Soil		
Job Nu	Imber:	S08_5506		Separation:	Silica gel				Date Booked i	r 28-Aug-08	i i i i i i i i i i i i i i i i i i i	
QC Ba	tch Number:	83219		Eluents:	Hexane, DCM				Date Extracted	l 09-Sep-08		
Directo	ory:	D:\TES\DATA\Y2008\091	10TPH_GC3\060	B6801.D					Date Analysed	11-Sep-08		
Metho	d:	Ultra Sonic										
						Conce	entration, (mg	/kg) - as dry	weight.			
This	s sample data is not ac	credited.	>C8 - C10		>C10	>C10 - C12 >C12 - C		2 - C16	- C16 - C21		>C21 - C35	
	Sample ID	Client ID	Aliphatics	Aromatics	Aliphatics	Aromatics	Aliphatics	Aromatics	Aliphatics	Aromatics	Aliphatics	Aromatics
*	CL0825413	HP8S-004 0.0-1.2	<5	<5	<5	<5	<5	<5	<5	<5	<11.10	<11.10
*	CL0825414	BH8S-001 1.0-1.5	<5	<5	<5	<5	<5	<5	<5	<5	<11.06	<11.06
*	CL0825415	BH8S-002 1.5	<5	<5	<5	<5	<5	<5	<5	<5	<10.84	<10.84
*	CL0825416	HP8S-003 0.8	<5	<5	<5	<5	<5	<5	<5	<5	<11.22	<11.22
*	CL0825417	HP8S-002 0.6	<5	<5	<5	<5	<5	<5	<5	<5	<10.59	<10.59
*	CL0825418	TP8S-001 1.1	<5	<5	<5	<5	<5	<5	<5	<5	<11.35	<11.35
*	CL0825419	TP8S-003 1.1	<5	<5	<5	<5	<5	<5	<5	<5	<11.17	<11.17
*	CL0825420	TP8S-002 1.0	<5	<5	<5	<5	<5	<5	<5	<5	<10.45	<10.45
*												
*												
*	CL0825423	TP8F-015 0.3-0.6	<5	<5	<5	<5	<5	<5	<5	9.53	23.2	49.9
												<u> </u>

FID1 A, (0910TPH_GC3\047F5501.D) pА 700 600 500 400 300 200 100 0 -Sample ID: CL0825413ALI Job Number: S08 5506M Multiplier: Client: **RPS** Consultants 14.44 Dilution: Awe Burghfield 1 Site: Acquisition Method: 5UL_RUNF.M Client Sample Ref: HP8S-004 0.0-1.2 Acquisition Date/Time: 10-Sep-08 Datafile: D:\TES\DATA\Y2008\0910TPH_GC3\047F5501.D

Petroleum Hydrocarbons (C8 to C40) by GC/FID Aliphatics Fraction.

Where individual results are flagged see report notes for for status.

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Results corrected to dry weight at 105℃ where appr opriate, in accordance with the MCERTS standard. EFS/085506M Ver. 3

FID2 B, (0910TPH_G	C3\097B5601.D)						
pA –							
		1					
800 -							
600 -							
400 -							
200 -							
1 1	hata II						
o			· · · · · ·	· · · · · · ·			
	1 2	3	4	5m			
Sample ID:	CL0825413ARO	Job Number:	S08_5506M				
Multiplier:	11.02	Client:	RPS Consultants				
Dilution:	1	Site:	Awe Burahfield				
Acquisition Method	5UL RUNE M	Client Sample Ref	HP8S-004 0 0-1 2				
Acquisition Dete/Times	10 Con 09	onent oample Ker.	11 00 004 0.0 1.2				
Acquisition Date/ I ime:	10-Sep-08						
Datafile:	D:\TES\DATA\Y2008\0910TPH_GC3\097B5601.D						

Where individual results are flagged see report notes for for status. Results corrected to dry weight at 105°C where appr opriate, in accordance with the MCERTS standard.

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EFS/085506M Ver. 3

FID1 A, (0910TPH_GC3\048F5601.D) pA [·] 600 500 400 300 200 100 0 -Sample ID: CL0825414ALI Job Number: S08 5506M Multiplier: Client: **RPS** Consultants 14.44 Dilution: Awe Burghfield 1 Site: Acquisition Method: 5UL_RUNF.M Client Sample Ref: BH8S-001 1.0-1.5 Acquisition Date/Time: 10-Sep-08 Datafile: D:\TES\DATA\Y2008\0910TPH_GC3\048F5601.D

Petroleum Hydrocarbons (C8 to C40) by GC/FID Aliphatics Fraction.

Where individual results are flagged see report notes for for status.

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Results corrected to dry weight at 105°C where appr opriate, in accordance with the MCERTS standard.

EFS/085506M Ver. 3

FID2 B, (0910TPH_GC3\098B5701.D) pА 900 800 700 600 500 400 300 200 100 rithh 0 -Job Number: Sample ID: CL0825414ARO S08 5506M **RPS** Consultants Multiplier: Client: 11.02 Dilution: Awe Burghfield 1 Site: Acquisition Method: 5UL_RUNF.M Client Sample Ref: BH8S-001 1.0-1.5 Acquisition Date/Time: 10-Sep-08 Datafile: D:\TES\DATA\Y2008\0910TPH_GC3\098B5701.D

Petroleum Hydrocarbons (C8 to C40) by GC/FID Aromatics Fraction.

Where individual results are flagged see report notes for for status.

Page 19 of 38

Results corrected to dry weight at 105°C where appr opriate, in accordance with the MCERTS standard.
FID1 A, (0910TPH_GC3\049F5701.D) pА 600 500 400 300 200 100 0 -Sample ID: CL0825415ALI Job Number: S08 5506M Multiplier: Client: **RPS** Consultants 15.96 Dilution: Awe Burghfield 1 Site: Acquisition Method: 5UL_RUNF.M Client Sample Ref: BH8S-002 1.5 Acquisition Date/Time: 10-Sep-08 Datafile: D:\TES\DATA\Y2008\0910TPH_GC3\049F5701.D

Petroleum Hydrocarbons (C8 to C40) by GC/FID Aliphatics Fraction.

Where individual results are flagged see report notes for for status.

Page 20 of 38

Results corrected to dry weight at 105°C where appr opriate, in accordance with the MCERTS standard.

FID2 B, (0910TPH_GC3\099B5801.D) рА 900 -800 700 600 500 400 300 200 100 Juhr 0 -Job Number: Sample ID: CL0825415ARO S08 5506M Multiplier: Client: **RPS** Consultants 12.18 Dilution: Awe Burghfield 1 Site: Acquisition Method: 5UL_RUNF.M Client Sample Ref: BH8S-002 1.5 Acquisition Date/Time: 10-Sep-08 Datafile: D:\TES\DATA\Y2008\0910TPH_GC3\099B5801.D

Petroleum Hydrocarbons (C8 to C40) by GC/FID Aromatics Fraction.

Where individual results are flagged see report notes for for status.

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Results corrected to dry weight at 105℃ where appr opriate, in accordance with the MCERTS standard. EFS/085506M Ver. 3

FID1 A, (0910TPH_GC3\050F5801.D) pА 600 500 400 300 200 100 0 -Sample ID: CL0825416ALI Job Number: S08 5506M Multiplier: Client: **RPS** Consultants 14.44 Dilution: Awe Burghfield 1 Site: Acquisition Method: 5UL_RUNF.M Client Sample Ref: HP8S-003 0.8 Acquisition Date/Time: 10-Sep-08 Datafile: D:\TES\DATA\Y2008\0910TPH_GC3\050F5801.D

Petroleum Hydrocarbons (C8 to C40) by GC/FID Aliphatics Fraction.

Where individual results are flagged see report notes for for status.

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Results corrected to dry weight at 105°C where appr opriate, in accordance with the MCERTS standard.



Petroleum Hydrocarbons (C8 to C40) by GC/FID Aromatics Fraction.

Where individual results are flagged see report notes for for status.

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Results corrected to dry weight at 105°C where appr opriate, in accordance with the MCERTS standard.

FID1 A, (0910TPH_GC3\004F5901.D) pА 600 500 400 300 200 100 0 -Sample ID: CL0825417ALI Job Number: S08 5506M Multiplier: Client: **RPS** Consultants 15.96 Dilution: Awe Burghfield 1 Site: Acquisition Method: 5UL_RUNF.M Client Sample Ref: HP8S-002 0.6 Acquisition Date/Time: 10-Sep-08 Datafile: D:\TES\DATA\Y2008\0910TPH_GC3\004F5901.D

Petroleum Hydrocarbons (C8 to C40) by GC/FID Aliphatics Fraction.

Where individual results are flagged see report notes for for status.

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Results corrected to dry weight at 105°C where appr opriate, in accordance with the MCERTS standard.



Petroleum Hydrocarbons (C8 to C40) by GC/FID Aromatics Fraction.

Where individual results are flagged see report notes for for status.

Results corrected to dry weight at 105°C where appr opriate, in accordance with the MCERTS standard.

FID1 A, (0910TPH_GC3\005F6001.D) pА 600 500 400 300 200 100 0 -Sample ID: CL0825418ALI Job Number: S08 5506M Multiplier: Client: **RPS** Consultants 15.96 Dilution: Awe Burghfield 1 Site: Acquisition Method: 5UL_RUNF.M Client Sample Ref: TP8S-001 1.1 Acquisition Date/Time: 10-Sep-08 Datafile: D:\TES\DATA\Y2008\0910TPH_GC3\005F6001.D

Petroleum Hydrocarbons (C8 to C40) by GC/FID Aliphatics Fraction.

Where individual results are flagged see report notes for for status.

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Results corrected to dry weight at 105°C where appr opriate, in accordance with the MCERTS standard.

FID2 B, (0910TPH_GC3\055B6101.D) рА 900 -800 700 600 500 400 300 200 100 Mhr 0 -Job Number: Sample ID: CL0825418ARO S08 5506M Multiplier: Client: **RPS** Consultants 12.18 Dilution: Awe Burghfield 1 Site: TP8S-001 1.1 Acquisition Method: 5UL_RUNF.M Client Sample Ref: Acquisition Date/Time: 10-Sep-08 Datafile: D:\TES\DATA\Y2008\0910TPH_GC3\055B6101.D

Petroleum Hydrocarbons (C8 to C40) by GC/FID Aromatics Fraction.

Where individual results are flagged see report notes for for status.

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Results corrected to dry weight at 105°C where appr opriate, in accordance with the MCERTS standard. EFS/085506M Ver. 3



Petroleum Hydrocarbons (C8 to C40) by GC/FID Aliphatics Fraction.

Where individual results are flagged see report notes for for status.

Results corrected to dry weight at 105°C where appr opriate, in accordance with the MCERTS standard.

FID2 B, (0910TPH_GC3\056B6201.D) pА 900 800 700 600 500 400 300 200 100 Mhr 0 – Job Number: Sample ID: CL0825419ARO S08 5506M **RPS** Consultants Multiplier: Client: 12.18 Dilution: Awe Burghfield 1 Site: Acquisition Method: 5UL_RUNF.M Client Sample Ref: TP8S-003 1.1 Acquisition Date/Time: 10-Sep-08 Datafile: D:\TES\DATA\Y2008\0910TPH_GC3\056B6201.D

Petroleum Hydrocarbons (C8 to C40) by GC/FID Aromatics Fraction.

Where individual results are flagged see report notes for for status. Results corrected to dry weight at 105℃ where appr opriate, in accordance with the MCERTS standard.

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ndard. EFS/085506M Ver. 3

FID1 A, (0910TPH_GC3\007F6401.D) pА 700 600 500 400 300 200 100 0 -Sample ID: CL0825420ALI Job Number: S08 5506M Multiplier: Client: **RPS** Consultants 15.96 Dilution: Awe Burghfield 1 Site: Acquisition Method: 5UL_RUNF.M Client Sample Ref: TP8S-002 1.0 Acquisition Date/Time: 10-Sep-08 Datafile: D:\TES\DATA\Y2008\0910TPH_GC3\007F6401.D

Petroleum Hydrocarbons (C8 to C40) by GC/FID Aliphatics Fraction.

Where individual results are flagged see report notes for for status.

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Results corrected to dry weight at 105℃ where appr opriate, in accordance with the MCERTS standard. EFS/085506M Ver. 3



Petroleum Hydrocarbons (C8 to C40) by GC/FID Aromatics Fraction.

Where individual results are flagged see report notes for for status.

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Results corrected to dry weight at 105°C where appr opriate, in accordance with the MCERTS standard. EFS/

FID1 A, (0910TPH_GC3\010F6701.D) pА 600 500 400 300 200 100 0 -Sample ID: CL0825423ALI Job Number: S08 5506M Multiplier: Client: **RPS** Consultants 15.96 Dilution: Awe Burghfield 1 Site: Acquisition Method: 5UL_RUNF.M Client Sample Ref: TP8F-015 0.3-0.6 Acquisition Date/Time: 10-Sep-08 Datafile: D:\TES\DATA\Y2008\0910TPH_GC3\010F6701.D

Petroleum Hydrocarbons (C8 to C40) by GC/FID Aliphatics Fraction.

Where individual results are flagged see report notes for for status.

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Results corrected to dry weight at 105℃ where appr opriate, in accordance with the MCERTS standard. EFS/085506M Ver. 3



Petroleum Hydrocarbons (C8 to C40) by GC/FID Aromatics Fraction.

Where individual results are flagged see report notes for for status.

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Results corrected to dry weight at 105℃ where appr opriate, in accordance with the MCERTS standard. EFS/085506M Ver. 3

Report Notes

Soil/Solid analysis specific:

S04 analysis not conducted in accordance with BS1377 unless otherwise stated Water Soluble Sulphate on 2:1 water:soil extract AR denotes analysis conducted on the As Received sample

Water analysis specific:

Results expressed as mg/l unless stated otherwise

Oil analysis specific:

Results expressed as mg/kg unless stated otherwise S.G. expressed as $g/cm^3@ 15^{\circ}C$

Filter analysis specific:

Results expressed as mg on filter unless stated otherwise

VOC analysis specific:

Explanatory notes for data flagging

- **U** = undetected above reporting limit
- J = concentration at instrument was below lowest calibration standard
- E = concentration at instrument was above top calibration standard
- **B** = compound was detected in method blank

Gas (Tedlar bag) analysis specific:

Results expressed as ug/l unless stated otherwise

Air (Carbon tube) analysis specific:

Results expressed as ug on tube unless stated otherwise

Asbestos analysis specific:

CH denotes Chrysotile CR denotes Crocidolite AM denotes Amosite NADIS denotes No Asbestos Detected in Sample NBFO denotes No Bulk fibres Observed

General notes:

^ this analysis was subcontracted to another laboratory

\$ Within laboratory tolerances

\$\$ unable to analyse due to nature of sample

¥ Results for guidance only, possible interference

& Blank corrected

I.S insufficient sample for analysis

Intf Unable to analyse due to interferences

N.D Not determined

N.R Not recorded N.Det Not detected

Req Analysis Requested, see attached sheets for results

P Raised detection limit due to nature of sample

* denotes that all accreditation has been removed by the laboratory for this result.

‡ denotes that Mcerts accreditation has been removed by the laboratory for this result.

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory

may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected.

If you require further details of the circumstances leading to the removal of the accreditation from any data item please do not hesitate to contact the laboratory



TEST REPORT SOIL SAMPLE ANALYSIS



TES Report No. EFS/085645M (Ver. 1)

RPS Consultants St.Anne's House Oxford Square Oxford Street Newbury Berkshire RGH 13Q

Site: AWE Burghfield

The 2 samples described in this report were logged for analysis by TES Bretby on 03-Sep-2008. The analysis was completed by: 22-Sep-2008

Tests where the accreditation is set to N or No, and any individual data items marked with a * are not UKAS or MCERTS accredited Any opinions or interpretations expressed herein are outside the scope of any UKAS accreditation held by TES Bretby Laboratories.

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 3) Table of PAH (MS-SIM) (80) Results (Pages 4 to 6) Table of TPH (Si) banding (std) (Page 7) GC-FID Chromatograms (Pages 8 to 13) Table of VOC Results (Pages 14 to 17) Table of VOC (Tics) Results (Pages 18 to 21) Table of Report Notes (Page 22)

On behalf of TES Bretby : J Hannah

J. Hannah Project Co-ordinator

Date of Issue: 22-Sep-2008

Accreditation Codes: **N** (Not Accredited), **U** (UKAS), **UM** (UKAS & MCERTS) Tests marked '^' have been subcontracted to another laboratory. (NVM) - denotes the sample matrix is dissimilar to matrices upon which the MCERTS validation was based, and is therefore not accredited for MCERTS. All results are reported on a dry weight basis at 105°C unless otherwise stated. (except QC samples) TES Bretby accepts no responsibility for any sampling not carried out by our personnel.

Sample Descriptions

Client : RPS Consultants

Site : JER 3996-AWE MENSA

Report Number : S08_5645M

Lab ID Number	Client ID	Description
-		-
-		
-		
-		
CL/0825906	HP8S-001 0.5-1.0	Brown CLAY
CL/0825907	BH8F-001 1.0-1.5	Brown CLAY
-		
		1

	Units :	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	mg/kg	ug/kg	pH Units		
	Method Codes :	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	TMSS	TPHUSSI V	/OCSW810) WSLM3		
	Method Reporting Limits : Accreditation Code:		0.1	3	3	3.5 LIM	0.10	2.5 LIM	0.5	2.0	19.5 LIM	0.2	10.0	5	11		-
TES ID Number CL/	Client Sample Description	Arsenic (MS)	Cadmium (MS)	Chromium (MS)	Copper (MS)	Lead (MS)	Mercury (MS)	Nickel (MS)	Selenium (MS)	Vanadium (MS)	Zinc (MS)	Tot.Moisture @ 105C	TPH by GCFID (AR/Si)	VOC + TICs (8100)	pH units		
0825906	HP8S-001 0.5-1.0	7.3	0.15	23.4‡	14.4	16.1	<0.1	22.7	0.5	34.5	54.4	24.1	Req		7.3		
0825907	BH8F-001 1.0-1.5	9.1	0.26	25‡	15.8	17.5	<0.1	27.2	0.8	36.7	55.5	26.0	Req		8.2		
																	-
																	-
																	-
																	-
																	-
																	+
	TES Bretby PO Box 100, Bretby Business Park,	Client Name RPS Consultants							Ś	Soils Sa	ample A	nalysi	S	TE	<u>=s</u>		
	Burton-on-Trent, Staffordshire, DE15 0XD Tel +44 (0) 1283 554400 Fax +44 (0) 1283 554422	AWE Burghfield Date Printed 22-Se Report Number EFS/0856 Table Number								22-Sep-08 S/085645M 1	Bre	etby					

	Units :	ma/ka	ma/ka	ma/ka	ma/ka	ma/ka		% M/M									
	Method Codes :	ICPBOR	ICPMAJ	ICPMAJ	KONECL	PAHMSUS	SEN9	WSLM59									
	Method Reporting Limits :	0.5	1	1	5.0	0.08		0.02									
	Accreditation Code:	N	N	N	N		Ν	N									
TES ID Number CL/	Client Sample Description	Boron (H20 Soluble)	Barium	Beryllium	Chloride:	PAH by MS.17(0.08)	Asbestos (screening)	F.O.C. %									
0825906	HP8S-001 0.5-1.0	0.7	<1	<1	30	Req	NBFO	0.57									
0825907	BH8F-001 1.0-1.5	<0.5	<1	<1	243	Req	NBFO	0.43									
	TES Bretby PO Box 100, Bretby Business Park,	Client Name RPS Consultants							S	Soils Sa	ample /	Analysis	5	TE	S		
	Burton-on-Trent, Staffordshire, DE15 0XD Tel +44 (0) 1283 554400 Fax +44 (0) 1283 554422	AWE Burghfield							Date Printed 22-Se Report Number EFS/0856 Table Number EFS/0856				22-Sep-08 6/085645M 1	Bre	tby		

Polycyclic Aromatic Hydrocarbons GC/MS (SIM)

Customer and Site Details:
Sample Details:
LIMS ID Number:
QC Batch Number:
Quantitation File:
Directory:
Dilution:

RPS Consultants: JER 3996-AWE MENSA HP8S-001 0.5-1.0 CL0825906 3177 Initial Calibration 915PAH MS14\ 1.0

Job Number: Date Booked in: Date Extracted: **Date Analysed:** Matrix: Ext Method:

S08_5645M 03-Sep-08 05-Sep-08 17-Sep-08 Soil Ultrasonic

Accredited?: Yes

Target Compounds	CAS #	R.T.	Concentration	% Fit	Accr.
		(min)	mg/kg		code
Naphthalene	91-20-3	-	< 0.11	-	UM
Acenaphthylene	208-96-8	-	< 0.11	-	U
Acenaphthene	83-32-9	-	< 0.11	-	UM
Fluorene	86-73-7	-	< 0.11	-	UM
Phenanthrene	85-01-8	-	< 0.11	-	UM
Anthracene	120-12-7	-	< 0.11	-	U
Fluoranthene	206-44-0	-	< 0.11	-	UM
Pyrene	129-00-0	-	< 0.11	-	UM
Benzo[a]anthracene	56-55-3	-	< 0.11	-	UM
Chrysene	218-01-9	-	< 0.11	-	UM
Benzo[b]fluoranthene	205-99-2	-	< 0.11	-	UM
Benzo[k]fluoranthene	207-08-9	-	< 0.11	-	UM
Benzo[a]pyrene	50-32-8	-	< 0.11	-	UM
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.11	-	UM
Dibenzo[a,h]anthracene	53-70-3	-	< 0.11	-	UM
Benzo[g,h,i]perylene	191-24-2	-	< 0.11	-	UM
Coronene	191-07-1 *	-	< 0.11	-	N
Total (USEPA16) PAHs	-	-	< 1.69	-	Ν

* Denotes compound is not UKAS accredited

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	73
Acenaphthene-d10	73
Phenanthrene-d10	76
Chrysene-d12	83
Perylene-d12	75

Surrogates	% Rec
Nitrobenzene-d5	N.D
2-Fluorobiphenyl	96
Terphenyl-d14	104

Concentrations are reported on a dry weight basis.

The Total PAH result is the sum of non-rounded individual PAH results and therefore may differ to the sum of the rounded individual PAH results printed above. By convention, where any one or more result is a "less than", the total is expressed as a "less than" and includes the "less than" concentration within the total.

Polycyclic Aromatic Hydrocarbons GC/MS (SIM)

Customer and Site Details:
Sample Details:
LIMS ID Number:
QC Batch Number:
Quantitation File:
Directory:
Dilution:

RPS Consultants: JER 3996-AWE MENSA BH8F-001 1.0-1.5 CL0825907 3177 Initial Calibration 915PAH MS14\ 1.0

Job Number: Date Booked in: Date Extracted: **Date Analysed:** Matrix: Ext Method:

S08_5645M 03-Sep-08 05-Sep-08 17-Sep-08 Soil Ultrasonic

Accredited?: Yes

Target Compounds	CAS #	R.T.	Concentration	% Fit	Accr.
		(min)	mg/kg		code
Naphthalene	91-20-3	-	< 0.11	-	UM
Acenaphthylene	208-96-8	-	< 0.11	-	U
Acenaphthene	83-32-9	-	< 0.11	-	UM
Fluorene	86-73-7	-	< 0.11	-	UM
Phenanthrene	85-01-8	-	< 0.11	-	UM
Anthracene	120-12-7	-	< 0.11	-	U
Fluoranthene	206-44-0	-	< 0.11	-	UM
Pyrene	129-00-0	-	< 0.11	-	UM
Benzo[a]anthracene	56-55-3	-	< 0.11	-	UM
Chrysene	218-01-9	-	< 0.11	-	UM
Benzo[b]fluoranthene	205-99-2	-	< 0.11	-	UM
Benzo[k]fluoranthene	207-08-9	-	< 0.11	-	UM
Benzo[a]pyrene	50-32-8	-	< 0.11	-	UM
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.11	-	UM
Dibenzo[a,h]anthracene	53-70-3	-	< 0.11	-	UM
Benzo[g,h,i]perylene	191-24-2	-	< 0.11	-	UM
Coronene	191-07-1 *	-	< 0.11	-	Ν
Total (USEPA16) PAHs	-	-	< 1.73	-	N

* Denotes compound is not UKAS accredited

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	75
Acenaphthene-d10	75
Phenanthrene-d10	77
Chrysene-d12	84
Perylene-d12	77

Surrogates	% Rec
Nitrobenzene-d5	N.D
2-Fluorobiphenyl	93
Terphenyl-d14	101

Concentrations are reported on a dry weight basis.

The Total PAH result is the sum of non-rounded individual PAH results and therefore may differ to the sum of the rounded individual PAH results printed above. By convention, where any one or more result is a "less than", the total is expressed as a "less than" and includes the "less than" concentration within the total.

ALIPHATIC / AROMATIC FRACTION BY GC/FID

Customer and Site Details:	RPS Consultants : JER 3	3996-AWE MENS	SA					Matrix:	Soil						
Job Number:	S08_5645		Separation:	Silica gel				Date Booked in	r 03-Sep-08						
QC Batch Number:	83177		Eluents:	Hexane, DCM				Date Extracted	05-Sep-08						
Directory:	D:\TES\DATA\Y2008\090	08PH_GC4\082E	39101.D					Date Analysed	: 09-Sep-08						
Method:	Ultra Sonic	Jitra Sonic													
			Concentration, (mg/kg) - as dry weight.												
This sample data is not ac	credited.	>C8	- C10	>C10	- C12	>C12	2 - C16	>C16	- C21	>C21 - C35					
Sample ID	Client ID	Aliphatics	Aromatics	Aliphatics	Aromatics	Aliphatics	Aromatics	Aliphatics	Aromatics	Aliphatics	Aromatics				
* CL0825906	HP8S-001 0.5-1.0	<5	<5	<5	<5	<5	<5	<5	<5	<11.54	<11.54				
*															
*															



Petroleum Hydrocarbons (C8 to C40) by GC/FID Aliphatics Fraction.

Where individual results are flagged see report notes for for status.

Page 8 of 22

Results corrected to dry weight at 105°C where appr opriate, in accordance with the MCERTS standard.

Petroleum Hydrocarbons (C8 to C40) by GC/FID Aromatics Fraction.

FID2 B, (0908PH_GC4\0	080B8901.D)			
рА А				
1000 -				
-				
800 -				
600 -				
ò .	1	2 3	4	5 min
Sample ID:	CL0825906ARO	Job Number:	S08_5645M	
Multiplier:	11.4	Client:	RPS Consultants	
Dilution:	1	Site:	JER 3996-AWE MENSA	
Acquisition Method:	5UL_RUNF.M	Client Sample Ref:	HP8S-001 0.5-1.0	
Acquisition Date/Time:	09-Sep-08			
Datafile:	D:\TES\DATA\Y2008\0908	PH_GC4\080B8901.D		

Page 9 of 22

Where individual results are flagged see report notes for for status. Results corrected to dry weight at 105°C where appr opriate, in accordance with the MCERTS standard.



Petroleum Hydrocarbons (C8 to C40) by GC/FID Aliphatics Fraction.

Where individual results are flagged see report notes for for status.

Results corrected to dry weight at 105°C where appr opriate, in accordance with the MCERTS standard.

Petroleum Hydrocarbons (C8 to C40) by GC/FID Aromatics Fraction.

soon	F	ID2 B, (0908PH_GC4\08	31B9001.D)					
Sample ID: CL0825907ARO Job Number: S08_5645M Multiplier: 12.6 Client: RPS Consultants Dilution: 1 Site: JER 3906-AWE M Acquisition Method: 5UL_RUNF.M Client Sample Ref: BH8F-001 1.0-1.5	рА							
10000 0 600 0 400 0 400 0 2000 0 2								
1000	1			I				
sooo sooo	-							
Sample ID: CL0825907ARO Multiplier: 12.6 Site: Job Number: CL0825907ARO Log25907ARO Site: Job Number: CL0825907ARO Client: RPS Consultants Site: JER 3996-AWE M Acquisition Method: 5UL_RUNF.M Client Sample Ref: BH8F-001 1.0-1.5	1000 -							
Sample ID: CL0825907ARO Multiplier: 12.6 Site: JER 3996-AWE M Acquisition Method: 5UL_RUNF.M Client Sample Ref: BH8F-001 1.0-1.5	_							
Sample ID: CL0825907ARO Multiplier: 1 1 Acquisition Method: 5UL_RUNF.M Client Sample Ref: BH8F-001 1.0-1.5								
Sample ID: CL0825907ARO Multiplier: 12.6 Client: RPS Consultants Dilution: 1 Acquisition Method: 5UL_RUNF.M Client Sample Ref: BH8F-001 1.0-1.5	-							
Sample ID: CL0825907ARO Multiplier: 12.6 CL0825907ARO L0825907ARO Job Number: S08_5645M Multiplier: 12.6 Client: RPS Consultants Dilution: 1 Acquisition Method: 5UL_RUNF.M Client Sample Ref: BH8F-001 1.0-1.5	-							
Sample ID: CL0825907ARO Job Number: S08_5645M Multiplier: 12.6 Client: RPS Consultants Dilution: 1 Acquisition Method: 5UL_RUNF.M Client Sample Ref: BH8F-001 1.0-1.5	800 -							
Sample ID: CL0825907ARO Multiplier: 12.6 Dilution: Acquisition Method: SUL_RUNF.M Client Sample Ref: BH8F-001 1.0-1.5	_							
600 -								
6000 4000 4000 4000 2000	1							
600 -	-							
400 4	600 -							
400 4	-							
4000 4000								
400 4								
400 400 400 400 200 - - - - 200 - - - - 200 - - - - 200 - - - - 200 - - - - 200 - - - - 3 - - - - 200 - - - - - 3 - - - - - - 4 - - - - - - - Sample ID: CL0825907ARO Job Number: S08_5645M Multiplier: 12.6 Client: RPS Consultants Dilution: 1 Site: JER 3996-AWE M Acquisition Method: 5UL_RUNF.M Client Sample Ref: BH8F-001 1.0-1.5	-							
200 -	400 -							
200 -	-							
200 -	_							
200- 200-								
200 2	1							
Sample ID: CL0825907ARO Job Number: S08_5645M Multiplier: 12.6 Client: RPS Consultants Dilution: 1 Site: JER 3996-AWE M Acquisition Method: 5UL_RUNF.M Client Sample Ref: BH8F-001 1.0-1.5	200 -							
Sample ID: CL0825907ARO Job Number: S08_5645M Multiplier: 12.6 Client: RPS Consultants Dilution: 1 Site: JER 3996-AWE M Acquisition Method: 5UL_RUNF.M Client Sample Ref: BH8F-001 1.0-1.5	-							
Sample ID: CL0825907ARO Job Number: S08_5645M Multiplier: 12.6 Client: RPS Consultants Dilution: 1 Site: JER 3996-AWE M Acquisition Method: 5UL_RUNF.M Client Sample Ref: BH8F-001 1.0-1.5	-							
Sample ID: CL0825907ARO Job Number: S08_5645M Multiplier: 12.6 Client: RPS Consultants Dilution: 1 Site: JER 3996-AWE M Acquisition Method: 5UL_RUNF.M Client Sample Ref: BH8F-001 1.0-1.5	_							
Sample ID:CL0825907AROJob Number:S08_5645MMultiplier:12.6Client:RPS ConsultantsDilution:1Site:JER 3996-AWE MAcquisition Method:5UL_RUNF.MClient Sample Ref:BH8F-001 1.0-1.5				ll_				
Sample ID: CL0825907ARO Job Number: S08_5645M Multiplier: 12.6 Client: RPS Consultants Dilution: 1 Site: JER 3996-AWE M Acquisition Method: 5UL_RUNF.M Client Sample Ref: BH8F-001 1.0-1.5	0+0		1	2	3	4	5	min
Multiplier: 12.6 Client: RPS Consultants Dilution: 1 Site: JER 3996-AWE M Acquisition Method: 5UL_RUNF.M Client Sample Ref: BH8F-001 1.0-1.5	Sample ID):	CL0825907ARO		Job Number:	S08_5645M		
Dilution: 1 Site: JER 3996-AWE M Acquisition Method: 5UL_RUNF.M Client Sample Ref: BH8F-001 1.0-1.5	Multiplier	:	12.6		Client:	RPS Consultants		
Acquisition Method: 5UL_RUNF.M Client Sample Ref: BH8F-001 1.0-1.5	Dilution:		1		Site:	JER 3996-AWE MENSA		
	Acauisitic	on Method:	5UL RUNF.M		Client Sample Ref:	BH8F-001 1.0-1.5		
Acquisition Date/Time: 09-Sep-08	Acquisitio	on Date/Time	09-Sep-08					
Datafile: D:\TES\DATA\Y2008\0908PH_GC4\081B9001 D	Datafile:				001 D			
	Sample ID Nultiplier: Dilution: Acquisitio	D: : on Method:	CL0825907ARO 12.6 1 5UL_RUNF.M		Job Number: Client: Site: Client Sample Ref:	S08_5645M RPS Consultants JER 3996-AWE MENSA BH8F-001 1.0-1.5		

Where individual results are flagged see report notes for for status.

Page 11 of 22

Results corrected to dry weight at 105°C where appr opriate, in accordance with the MCERTS standard.

Report Notes

Soil/Solid analysis specific:

S04 analysis not conducted in accordance with BS1377 unless otherwise stated Water Soluble Sulphate on 2:1 water:soil extract AR denotes analysis conducted on the As Received sample

Water analysis specific:

Results expressed as mg/l unless stated otherwise

Oil analysis specific:

Results expressed as mg/kg unless stated otherwise S.G. expressed as $g/cm^3@ 15^{\circ}C$

Filter analysis specific:

Results expressed as mg on filter unless stated otherwise

VOC analysis specific:

Explanatory notes for data flagging

- **U** = undetected above reporting limit
- J = concentration at instrument was below lowest calibration standard
- E = concentration at instrument was above top calibration standard
- **B** = compound was detected in method blank

Gas (Tedlar bag) analysis specific:

Results expressed as ug/l unless stated otherwise

Air (Carbon tube) analysis specific:

Results expressed as ug on tube unless stated otherwise

Asbestos analysis specific:

CH denotes Chrysotile CR denotes Crocidolite AM denotes Amosite NADIS denotes No Asbestos Detected in Sample NBFO denotes No Bulk fibres Observed

General notes:

^ this analysis was subcontracted to another laboratory

\$ Within laboratory tolerances

\$\$ unable to analyse due to nature of sample

¥ Results for guidance only, possible interference

& Blank corrected

I.S insufficient sample for analysis

Intf Unable to analyse due to interferences

N.D Not determined

N.R Not recorded N.Det Not detected

Req Analysis Requested, see attached sheets for results

P Raised detection limit due to nature of sample

* denotes that all accreditation has been removed by the laboratory for this result.

‡ denotes that Mcerts accreditation has been removed by the laboratory for this result.

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory

may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected.

If you require further details of the circumstances leading to the removal of the accreditation from any data item please do not hesitate to contact the laboratory



TEST REPORT LEACHATE SAMPLE ANALYSIS



TES Report No. EXR/088255 (Ver. 1)

RPS Consultants Park House Greyfriars Road Cardiff CF10 3AF

Site: AWE Burghfield

The 1 sample described in this report were logged for analysis by TES Bretby on 22-Sep-2008. The analysis was completed by: 03-Oct-2008

Tests where the accreditation is set to N or No, and any individual data items marked with a * are not UKAS accredited Any opinions or interpretations expressed herein are outside the scope of any UKAS accreditation held by TES Bretby Laboratories.

The following tables are contained in this report:

Table 1 Main Analysis Results (Page 2) Table of Report Notes (Page 3)

On behalf of TES Bretby : J Elstub

.Elles

Project Co-ordinator

Date of Issue: 03-Oct-2008

Tests marked '^' have been subcontracted to another laboratory.

TES Bretby accepts no responsibility for any sampling not carried out by our personnel.

	l Inits :	ma/l ma/l ma/l ma/l ma/l ma/l ma/l						ma/l	ma/l							
	Method Codes :	WELM2														
	Method Departing Limite	VV SLIVIS	0.001	0.001	0.0001		0.001	0.000	0.002	0.001	CPWATVAP	0.0001	0.001			
			0.001	0.001	0.0001	0.001	0.001	0.002	0.002	0.001	0.01	0.0001	0.001	0.01		
	UKAS Accredited :	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	no		
TES ID Number EX/	Client Sample Description	pH units	Nickel as Ni (Dissolved)	Chromium as Cr (Dissolved)	Cadmium as Cd (Dissolved)	Copper as Cu (Dissolved)	Lead as Pb (Dissolved)	Zinc as Zn (Dissolved)	Manganese as Mn (Dissolved)	Arsenic as As (Dissolved)	Boron as B (Dissolved) a	Mercury as Hg (Dissolved)	Selenium as Se (Dissolved)	Beryllium as Be (Dissolved) a		
0832815	TP8S-003 1.1	7.9	0.001	0.001	<0.0001	0.004	0.001	0.020	0.014	0.001	0.42	<0.0001	<0.001	<0.01		
			+													
			+				<u> </u>									
			+				<u> </u>									
			+				<u> </u>									
			1													
	TES Bretby	Client Name RPS Consultants								Leachate Sample Analysis						
PO Box 100, Bretby Business Park, Contact Mr G Moore																
	Burton-on-Trent, Staffordshire, DE15 0XD	AWE Burghfield							Date Pri	nted			03-Oct-08	Bretby		
	Tel +44 (0) 1283 554400								Report Number			EX	R/088255	Brotby		
	Fax +44 (0) 1283 554422							-			Table Nu	umber			1	

Report Notes

Soil/Solid analysis specific:

Results expressed as mg/kg on an air dried basis unless stated otherwise S04 analysis not conducted in accordance with BS1377 unless otherwise stated Water Soluble Sulphate on 2:1 water:soil extract AR denotes analysis conducted on the As Received sample

Water analysis specific:

Results expressed as mg/l unless stated otherwise

Oil analysis specific:

Results expressed as mg/kg unless stated otherwise S.G. expressed as $g/cm^3@ 15^{\circ}C$

Filter analysis specific:

Results expressed as mg on filter unless stated otherwise

VOC analysis specific:

Explanatory notes for data flagging

- **U** = undetected above reporting limit
- J = concentration at instrument was below lowest calibration standard
- E = concentration at instrument was above top calibration standard
- **B** = compound was detected in method blank

Gas (Tedlar bag) analysis specific:

Results expressed as ug/l unless stated otherwise

Air (Carbon tube) analysis specific:

Results expressed as ug on tube unless stated otherwise

Asbestos analysis specific:

CH denotes Chrysotile CR denotes Crocidolite AM denotes Amosite NADIS denotes No Asbestos Detected in Sample NBFO denotes No Bulk fibres Observed

General notes:

^ this analysis was subcontracted to another laboratory

\$ Within laboratory tolerances

\$\$ unable to analyse due to nature of sample

¥ Results for guidance only, possible interference

& Blank corrected

I.S insufficient sample for analysis

Intf Unable to analyse due to interferences

N.D Not determined

N.R Not recorded

N.Det Not detected

 $\ensuremath{\text{Req}}$ Analysis Requested, see attached sheets for results

P Raised detection limit due to nature of sample

* denotes that all accreditation has been removed by the laboratory for this result.

‡ denotes that Mcerts accreditation has been removed by the laboratory for this result.

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may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected.

If you require further details of the circumstances leading to the removal of the accreditation from any data item please do not hesitate to contact the laboratory



TEST REPORT LEACHATE SAMPLE ANALYSIS



TES Report No. EXR/088256 (Ver. 1)

RPS Consultants Park House **Greyfriars Road** Cardiff CF10 3AF

Site: AWE Burghfield

The 3 samples described in this report were logged for analysis by TES Bretby on 22-Sep-2008. The analysis was completed by: 03-Oct-2008

Tests where the accreditation is set to N or No, and any individual data items marked with a * are not UKAS accredited Any opinions or interpretations expressed herein are outside the scope of any UKAS accreditation held by TES Bretby Laboratories.

The following tables are contained in this report:

Table 1 Main Analysis Results (Page 2) Table of Report Notes (Page 3)

On behalf of **TES Bretby :** J Elstub

1.Elles

Project Co-ordinator

Date of Issue: 03-Oct-2008

Tests marked '^' have been subcontracted to another laboratory.

TES Bretby accepts no responsibility for any sampling not carried out by our personnel.

	Units :	1	ma/l	ma/l	ma/l	ma/l	ma/l	ma/l	ma/l	ma/l	ma/l	ma/l	ma/l	ma/l	1	
	Method Codes :	WSLM3	ICPMSW	ICPMSW	ICPMSW	ICPMSW	ICPMSW	ICPMSW	ICPMSW	ICPMSW	CPWATVA	ICPMSW	ICPMSW	CPWATVAR	٠	
	Method Reporting Limits :		0.001	0.001	0.0001	0.001	0.001	0.002	0.002	0.001	0.01	0.0001	0.001	0.01		
	UKAS Accredited :	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	no		
TES ID Number EX/	Client Sample Description	pH units	Nickel as Ni (Dissolved)	Chromium as Cr (Dissolved)	Cadmium as Cd (Dissolved)	Copper as Cu (Dissolved)	Lead as Pb (Dissolved)	Zinc as Zn (Dissolved)	Manganese as Mn (Dissolved)	Arsenic as As (Dissolved)	Boron as B (Dissolved) a	Mercury as Hg (Dissolved)	Selenium as Se (Dissolved)	Beryllium as Be (Dissolved) a		
0832816	TP8F-007 0.0-0.6	7.8	0.005	0.003	0.0002	0.013	0.012	0.106	0.016	0.004	1.58	<0.0001	<0.001	<0.01		
0832817	TP8F-004 0.9	7.5	0.003	0.002	0.0001	0.010	0.004	0.054	0.017	0.004	0.55	0.0001	0.001	<0.01		
0832818	TP8F-014 0.85	7.5	0.004	0.003	<0.0001	0.010	0.006	0.105	0.008	0.006	0.92	<0.0001	<0.001	<0.01		
		<u> </u>														
!		<u> </u>														
	TES Bretby PO Box 100, Bretby Business Park,	Client Name RPS Consultants									Le	achate	Sampl	e Analy	rsis	TES
	Burton-on-Trent, Staffordshire, DE15 0XD Tel +44 (0) 1283 554400 Fax +44 (0) 1283 554422	AWE Burghfield									Date Pri Report N Table Nu	nted Number umber		EX	03-Oct-08 (R/088256 1	Bretby

Report Notes

Soil/Solid analysis specific:

Results expressed as mg/kg on an air dried basis unless stated otherwise S04 analysis not conducted in accordance with BS1377 unless otherwise stated Water Soluble Sulphate on 2:1 water:soil extract AR denotes analysis conducted on the As Received sample

Water analysis specific:

Results expressed as mg/l unless stated otherwise

Oil analysis specific:

Results expressed as mg/kg unless stated otherwise S.G. expressed as $g/cm^3@ 15^{\circ}C$

Filter analysis specific:

Results expressed as mg on filter unless stated otherwise

VOC analysis specific:

Explanatory notes for data flagging

- **U** = undetected above reporting limit
- J = concentration at instrument was below lowest calibration standard
- E = concentration at instrument was above top calibration standard
- **B** = compound was detected in method blank

Gas (Tedlar bag) analysis specific:

Results expressed as ug/l unless stated otherwise

Air (Carbon tube) analysis specific:

Results expressed as ug on tube unless stated otherwise

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General notes:

^ this analysis was subcontracted to another laboratory

\$ Within laboratory tolerances

\$\$ unable to analyse due to nature of sample

¥ Results for guidance only, possible interference

& Blank corrected

I.S insufficient sample for analysis

Intf Unable to analyse due to interferences

N.D Not determined

N.R Not recorded

N.Det Not detected

 $\ensuremath{\text{Req}}$ Analysis Requested, see attached sheets for results

P Raised detection limit due to nature of sample

* denotes that all accreditation has been removed by the laboratory for this result.

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Appendix G

Explosives Results – Waters

BAE Systems Property & Environmental Brisance House Euxton Lane Chorley Lancashire PR7 6AQ, England Telephone: (01257) 242000 Facsimile : (01257) 242018

TEST CERTIFICATE

Certificate No: BC0935/08

Site : RPS			Ref : A0009/08	
Client :	RPS Planning and Developme	nt	Date Received :	09/09/2008
Address :	St Anne's House		Date Completed :	16/09/2008
	Oxford Square Oxford Street Newbury		Date Of Report :	16/09/2008
	RG14 1JQ		Attention :	Graham Moore
Accreditation Ke	<u>ey</u> : U = UKAS	M = UKAS & MCERTS	# = Subcontracted	Tests

Test Methods

Surface Water Explosives using method ESAL/QC/4 part r

Approved :

Dr D.G. Malcolm Laboratory Manager



Mrs S. Marriott Deputy Laboratory Manager Mr M. Lattughi Senior Analyst Mr D.C. Poole Senior Analyst



No. 1764 ESAL/DOC 81/v2

Report Page 1 of 4

TABLE OF RESULTS

Water - Defence (Part 1 of 2)

Lab Code	20085898			20085899			2	0085900		20085901			
Client Ref A	BH8F-001			BH8F-002			В	H8F-003		BH8S-001			
Client Ref B	J	ER3996		J	ER3996		J	ER3996		JER3996			
Sample Type		Water			Water			Water		Water			
Soil Type	N/A			N/A				N/A		N/A			
НМХ	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U	
RDX	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U	
EGDN	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U	
Tetryl	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U	
NG	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U	
TNT	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U	
PETN	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U	
Picrite	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U	
Picric Acid	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U	
2,4-DNT	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U	
2,6-DNT	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U	
TABLE OF RESULTS

Water - Defence (Part 2 of 2)

Lab Code	20085902		
	20003302		
Client Ref A	BH8S-002		
Client Ref B	J	ER3996	
Sample Type		Water	
Soil Type		N/A	
HMX	<50	ug/l	U
RDX	<50	ug/l	U
EGDN	<50	ug/l	U
Tetryl	<50	ug/l	U
NG	<50	ug/l	U
TNT	<50	ug/l	U
PETN	<50	ug/l	U
Picrite	<50	ug/l	U
Picric Acid	<50	ug/l	U
2,4-DNT	<50	ug/l	U
2,6-DNT	<50	ug/l	U

COMMENTS AND DEPARTURES FROM STANDARD PROCEDURES

Lab ID Notes

There were no comments or departures from standard procedures

NOTES

- 1. This test report shall not be reproduced except in full, without written approval of the laboratory.
- 2. All results for soil samples are reported based on dry weight of soil which has been air-dried in open, shallow trays at ambient temperatures below 30°C and subsequently ground and sieved to pass through a nominal 750µm aperture sieve. In most cases, analysis is carried out directly on these prepared soils, with the following exceptions: volatile organic compounds; total and speciated phenols; free, total and complex cyanide; petrol range organic compounds; sulphide. These analyses are carried out on the soil "As received" and corrected for the known dry weight (at 105 °C) prior to reporting.
- 3. BAE Systems does not correct results for analytical recoveries.
- 4. Where provided, the value for total cresols is derived from the sum of the results for m- & p- cresol and o- cresol.
- 5. Where provided, the value for total xylenols is derived from the sum of the results for 3,4-dimethylphenol, 2,6 -dimethylphenol, 3,5-dimethylphenol, 2,3-dimethylphenol, 2,5-dimethylphenol and 2,4-dimethylphenol.
- 6. Where provided, the value for total phenols is derived from the sum of the results for resorcinol, phenol, m- & pcresol, o- cresol, 3,4-dimethylphenol, 2,6-dimethylphenol, 3,5-dimethylphenol, 2,3-dimethylphenol, 2,5 -dimethylphenol, 2,4-dimethylphenol, 1-naphthol, 2-isopropylphenol, 2,3,5-trimethylphenol and pentachlorophenol.
- 7. All samples were received in good condition unless otherwise stated. Results provided by the Laboratory are based on samples submitted by clients. Once submitted, samples requiring analysis are stored at below 8 °C. The Laboratory cannot be held responsible for the storage, condition or preservation of samples prior to arrival.
- 8. Validation studies indicate that the concentration of nitrocellulose in high organic content soils may be overestimated.
- 9. A value of NQ indicates that a quantitative result could not be obtained because doping trials showed that the compound was retained by the matrix.
- 10. Soil descriptions are given in order to provide a log of sample matrices submitted and are not intended as full geological descriptions.
- 11. The initials or common names used for reporting explosives relate to the following compounds: Nitrocellulose(NC); Cyclotetramethylene Tetranitramine (HMX); Cyclo-1,3,5-Trimethylene-2,4,6-Trinitramine (RDX); Ethylene Glycol Dinitrate (EGDN); 2,4,6-Trinitro-Phenylmethyl Nitramine (Tetryl); Glycerol Trinitrate (NG); 2,4,6-Trinitrotoluene (TNT); Pentaeryhritol Tetranitrate (PETN); Hexanitro-Stilbene (HNS); Nitroguanidine (Picrite); 2,4,6-Trinitro Phenol (Picric Acid); 2,4-Dinitrotoluene (2,4-DNT); 2,6-Dinitrotoluene (2,6-DNT).
- 12. * Some reporting limits may be raised due to poor recovery of internal standard or dilution of highly contaminated samples.
- 13. # Mass spectral match criteria were not fully met, possibly indicating a co-eluting peak that may inflate the result.
- 14. Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

End of Report BC0935/08

BAE Systems Property & Environmental Brisance House Euxton Lane Chorley Lancashire PR7 6AQ, England Telephone: (01257) 242000 Facsimile : (01257) 242018

TEST CERTIFICATE

Certificate No: BC0977/08

Site :			Ref : A0009/08	
Client :	RPS Planning and Developme	ent	Date Received :	23/09/2008
Address :	St Anne's House		Date Completed :	29/09/2008
	Oxford Square Oxford Street Newbury		Date Of Report :	29/09/2008
	RG14 1JQ		Attention :	Chris Warde
Accreditation Ke	<u>ey</u> : U = UKAS	M = UKAS & MCERTS	# = Subcontracted	Tests

Test Methods

Surface Water Explosives using method ESAL/QC/4 part r

Approved :

Dr D.G. Malcolm Laboratory Manager



Mrs S. Marriott Deputy Laboratory Manager Mr M. Lattughi Senior Analyst Mr D.C. Poole Senior Analyst



No. 1764 ESAL/DOC 81/v2

BC0977/08

Report Page 1 of 4

TABLE OF RESULTS

Water - Defence (Part 1 of 2)

Lab Code	2	0086215		20086216		20086217			20086218			
Client Ref A	J	ER 3996		J	ER 3996		J	ER 3996		J	ER 3996	
Client Ref B	В	H8F-001		В	H8F-002		В	H8F-003		В	H8S-001	
Sample Type		Water			Water			Water			Water	
Soil Type		N/A			N/A			N/A			N/A	
НМХ	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U
RDX	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U
EGDN	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U
Tetryl	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U
NG	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U
TNT	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U
PETN	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U
Picrite	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U
Picric Acid	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U
2,4-DNT	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U
2,6-DNT	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U

TABLE OF RESULTS

Water - Defence (Part 2 of 2)

Lab Cada	2	0086210	
	20000219		
Client Ref A	J	ER 3996	
Client Ref B	В	H8S-002	
Sample Type		Water	
Soil Type	N/A		
HMX	<50	ug/l	U
RDX	<50	ug/l	U
EGDN	<50	ug/l	U
Tetryl	<50	ug/l	U
NG	<50	ug/l	U
TNT	<50	ug/l	U
PETN	<50	ug/l	U
Picrite	<50	ug/l	U
Picric Acid	<50	ug/l	U
2,4-DNT	<50	ug/l	U
2,6-DNT	<50	ug/l	U

COMMENTS AND DEPARTURES FROM STANDARD PROCEDURES

Lab ID Notes

There were no comments or departures from standard procedures

NOTES

- 1. This test report shall not be reproduced except in full, without written approval of the laboratory.
- 2. All results for soil samples are reported based on dry weight of soil which has been air-dried in open, shallow trays at ambient temperatures below 30°C and subsequently ground and sieved to pass through a nominal 750µm aperture sieve. In most cases, analysis is carried out directly on these prepared soils, with the following exceptions: volatile organic compounds; total and speciated phenols; free, total and complex cyanide; petrol range organic compounds; sulphide. These analyses are carried out on the soil "As received" and corrected for the known dry weight (at 105 °C) prior to reporting.
- 3. BAE Systems does not correct results for analytical recoveries.
- 4. Where provided, the value for total cresols is derived from the sum of the results for m- & p- cresol and o- cresol.
- 5. Where provided, the value for total xylenols is derived from the sum of the results for 3,4-dimethylphenol, 2,6 -dimethylphenol, 3,5-dimethylphenol, 2,3-dimethylphenol, 2,5-dimethylphenol and 2,4-dimethylphenol.
- 6. Where provided, the value for total phenols is derived from the sum of the results for resorcinol, phenol, m- & pcresol, o- cresol, 3,4-dimethylphenol, 2,6-dimethylphenol, 3,5-dimethylphenol, 2,3-dimethylphenol, 2,5 -dimethylphenol, 2,4-dimethylphenol, 1-naphthol, 2-isopropylphenol, 2,3,5-trimethylphenol and pentachlorophenol.
- 7. All samples were received in good condition unless otherwise stated. Results provided by the Laboratory are based on samples submitted by clients. Once submitted, samples requiring analysis are stored at below 8 °C. The Laboratory cannot be held responsible for the storage, condition or preservation of samples prior to arrival.
- 8. Validation studies indicate that the concentration of nitrocellulose in high organic content soils may be overestimated.
- 9. A value of NQ indicates that a quantitative result could not be obtained because doping trials showed that the compound was retained by the matrix.
- 10. Soil descriptions are given in order to provide a log of sample matrices submitted and are not intended as full geological descriptions.
- 11. The initials or common names used for reporting explosives relate to the following compounds: Nitrocellulose(NC); Cyclotetramethylene Tetranitramine (HMX); Cyclo-1,3,5-Trimethylene-2,4,6-Trinitramine (RDX); Ethylene Glycol Dinitrate (EGDN); 2,4,6-Trinitro-Phenylmethyl Nitramine (Tetryl); Glycerol Trinitrate (NG); 2,4,6-Trinitrotoluene (TNT); Pentaeryhritol Tetranitrate (PETN); Hexanitro-Stilbene (HNS); Nitroguanidine (Picrite); 2,4,6-Trinitro Phenol (Picric Acid); 2,4-Dinitrotoluene (2,4-DNT); 2,6-Dinitrotoluene (2,6-DNT).
- 12. * Some reporting limits may be raised due to poor recovery of internal standard or dilution of highly contaminated samples.
- 13. # Mass spectral match criteria were not fully met, possibly indicating a co-eluting peak that may inflate the result.
- 14. Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

End of Report BC0977/08

BAE Systems Property & Environmental Brisance House Euxton Lane Chorley Lancashire PR7 6AQ, England Telephone: (01257) 242000 Facsimile : (01257) 242018

TEST CERTIFICATE

Certificate No: BC1020/08

Site : Awe Bu	urghfield	Ref : A0009/08		
Client :	RPS Planning and Developm	ent	Date Received :	07/10/2008
Address :	St Anne's House		Date Completed :	09/10/2008
	Oxford Square Oxford Street Newbury		Date Of Report :	09/10/2008
	RG14 1JQ		Attention :	Chris Warde
Accreditation Ke	<u>ey</u> : U = UKAS	M = UKAS & MCERTS	# = Subcontracted	Tests

Test Methods

Surface Water Explosives using method ESAL/QC/4 part r

Approved :

Dr D.G. Malcolm Laboratory Manager



Mrs S. Marriott Deputy Laboratory Manager Mr M. Lattughi Senior Analyst Mr D.C. Poole Senior Analyst



No. 1764 ESAL/DOC 81/v2

BC1020/08

TABLE OF RESULTS

Water - Defence (Part 1 of 2)

Lab Code	2	0086458		20086459		20086460			2	0086461		
Client Ref A	B	H8F-001		BH8F-002		BH8F-002 BH8F-003			BH8S-001			
Client Ref B	J	ER 3996		J	ER 3996		J	ER 3996		JER 3996		
Sample Type		Water			Water			Water			Water	
Soil Type		N/A			N/A			N/A			N/A	
НМХ	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U
RDX	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U
EGDN	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U
Tetryl	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U
NG	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U
TNT	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U
PETN	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U
Picrite	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U
Picric Acid	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U
2,4-DNT	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U
2,6-DNT	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U	<50	ug/l	U

TABLE OF RESULTS

Water - Defence (Part 2 of 2)

Lab Code Client Ref A Client Ref B Sample Type Soil Type	20086462 BH8S-002 JER 3996 Water N/A			
НМХ	<50	ua/l	U	
RDX	<50	ug/l	U	
EGDN	<50	ug/l	U	
EGDIN	NGN	ug/i		
l etryl	<50	ug/l	U	
NG	<50	ug/l	U	
TNT	<50	ug/l	U	
PETN	<50	ug/l	U	
Picrite	<50	ug/l		
Picric Acid	<50	ug/l		
2,4-DNT	<50	ug/l	U	
2,6-DNT	<50	ug/l	U	

COMMENTS AND DEPARTURES FROM STANDARD PROCEDURES

Lab ID Notes

There were no comments or departures from standard procedures

NOTES

- 1. This test report shall not be reproduced except in full, without written approval of the laboratory.
- 2. All results for soil samples are reported based on dry weight of soil which has been air-dried in open, shallow trays at ambient temperatures below 30°C and subsequently ground and sieved to pass through a nominal 750µm aperture sieve. In most cases, analysis is carried out directly on these prepared soils, with the following exceptions: volatile organic compounds; total and speciated phenols; free, total and complex cyanide; petrol range organic compounds; sulphide. These analyses are carried out on the soil "As received" and corrected for the known dry weight (at 105 °C) prior to reporting.
- 3. BAE Systems does not correct results for analytical recoveries.
- 4. Where provided, the value for total cresols is derived from the sum of the results for m- & p- cresol and o- cresol.
- 5. Where provided, the value for total xylenols is derived from the sum of the results for 3,4-dimethylphenol, 2,6 -dimethylphenol, 3,5-dimethylphenol, 2,3-dimethylphenol, 2,5-dimethylphenol and 2,4-dimethylphenol.
- Where provided, the value for total phenols is derived from the sum of the results for resorcinol, phenol, m- & pcresol, o- cresol, 3,4-dimethylphenol, 2,6-dimethylphenol, 3,5-dimethylphenol, 2,3-dimethylphenol, 2,5
 -dimethylphenol, 2,4-dimethylphenol, 1-naphthol, 2-isopropylphenol, 2,3,5-trimethylphenol and pentachlorophenol.
- 7. All samples were received in good condition unless otherwise stated. Results provided by the Laboratory are based on samples submitted by clients. Once submitted, samples requiring analysis are stored at below 8 °C. The Laboratory cannot be held responsible for the storage, condition or preservation of samples prior to arrival.
- 8. Validation studies indicate that the concentration of nitrocellulose in high organic content soils may be overestimated.
- 9. A value of NQ indicates that a quantitative result could not be obtained because doping trials showed that the compound was retained by the matrix.
- 10. Soil descriptions are given in order to provide a log of sample matrices submitted and are not intended as full geological descriptions.
- 11. The initials or common names used for reporting explosives relate to the following compounds: Nitrocellulose(NC); Cyclotetramethylene Tetranitramine (HMX); Cyclo-1,3,5-Trimethylene-2,4,6-Trinitramine (RDX); Ethylene Glycol Dinitrate (EGDN); 2,4,6-Trinitro-Phenylmethyl Nitramine (Tetryl); Glycerol Trinitrate (NG); 2,4,6-Trinitrotoluene (TNT); Pentaeryhritol Tetranitrate (PETN); Hexanitro-Stilbene (HNS); Nitroguanidine (Picrite); 2,4,6-Trinitro Phenol (Picric Acid); 2,4-Dinitrotoluene (2,4-DNT); 2,6-Dinitrotoluene (2,6-DNT).
- 12. * Some reporting limits may be raised due to poor recovery of internal standard or dilution of highly contaminated samples.
- 13. # Mass spectral match criteria were not fully met, possibly indicating a co-eluting peak that may inflate the result.
- 14. Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

End of Report BC1020/08

Appendix H

Radiological Results – Waters



Test Report: Series RG 2390

Analysis of Gross Alpha/Beta in Water

Prepared for G Moore RPS Planning and Development Ltd September 2008



Analysis of Gross Alpha/Beta in Water

Client: RPS Planning and Development Ltd Park House Greyfriars Road Cardiff CF10 3AF United Kingdom

Testing Facility: Harwell Scientifics 551 South Becquerel Avenue Harwell Science and Innovation Campus Chilton Didcot Oxon OX11 0TB

Laboratory Reference:	Series RG 2390
Customer Reference:	BH8F-003 04/09/08
Quote Number:	ENR-HAR-5172
Job Number:	E915
Samples Received:	05 September 08
Analysis Completed:	15 September 08

Checked by: Approved by: Approver's name: Claire Wells Job Title: Analyst Report Date: 15 September 08



Test Report Series RG2390: Page 1 of 2



Introduction

Please find enclosed the results for the analysis of your samples. The samples were received in good condition.

Experimental

Gross Alpha /Beta in Water (WI/2002 Issue 9)

An acidified water sample was concentrated by evaporation and sulphuric acid (specific gravity 1.84) added, the solution was then evaporated to dryness. The resulting solid material was ashed in a muffle furnace. An aliquot of the ground residue was used to prepare a uniform thickness source which was counted on a Berthold LB770 low-level proportional counter for 1000 minutes.

Customer Reference	Laboratory Reference	Gross Alpha	Gross Beta
BH8F-003 04/09/08	RG 2390	< 1	1.2 ± 0.3
BH8F-001 04/09/08	RG 2391	<0.3	0.80 ± 0.13
BH8F-002 04/09/08	RG 2392	< 0.3	1.1 ± 0.2
BH8S-001 04/09/08	RG 2393	< 0.7	1.0 ± 0.2
BH8S-002 04/09/08	RG 2394	< 0.8	1.70 ± 0.30

Results for the Analysis of Gross Alpha/Beta in Water

Notes:

- 1. Results are presented as $Bq l^{-1}$ per sample as received.
- LoD's for gross alpha and gross beta are 0.05 and 0.1 Bq l⁻¹, unless otherwise stated.
 Uncertainties are quoted at 2 s.d. based on expanded uncertainties
 LoD's cannot always be achieved due to the dissolved solid content of the sample.



Test Report Series RG2390: Page 2 of 2



Test Report: Series RG 2568

Radiochemical Analysis of Waters

Graham Moore RPS Planning & Development

November 2008



Radiochemical Analysis of Waters

Client: RPS Planning & Development Park House Greyfriars Road Cardiff CF10 3AF United Kingdom

Testing Facility: Harwell Scientifics 551 South Becquerel Avenue Harwell Science and Innovation Campus Chilton Didcot Oxon OX11 0TB

Laboratory Reference:	Series RG 2568
Customer Reference:	BH8F-003
Quote Number:	ENR-HAR-5172
Job Number:	E915
Samples Received:	15 September 2008
Analysis Completed:	07 November 2008
Checked by:	

Approved by: Approver's name: Garry Prior Job Title: Principal Analyst Report Date: 10 November 2008



Test Report Series RG 2568: Page 1 of 5



Introduction

Please find enclosed the results for the analysis of your samples. The samples were received in good condition.

Experimental

Radioactivity analysis by gamma ray spectrometry (WI/2029 Issue 7)

The measurement technique is based on the use of germanium detectors coupled to a computerized analytical system. The detectors are calibrated for efficiency using a mixed radionuclide standard, which covers an energy range of approximately 120-2000 keV. Efficiencies at lower energies are determined on an individual basis. Stored spectra are analysed using the software FITZPEAKS for photopeak identification and subsequent quantification.

Plutonium & Uranium isotopes in water (WI/2116 Issue 3)

The water sample was filtered to remove any solid material. The appropriate internal yield tracers were added and the sample boiled under reflux for approximately 1 hour to remove carbon dioxide. After co-precipitation of the nuclides of interest with iron (III) hydroxide, ion-exchange chromatography was then used to further purify and separate the uranium, and plutonium isotopes, which were then electrodeposited onto stainless-steel discs. Measurement of the uranium and plutonium isotopes was carried out by alphaspectrometry.

Polonium-210 by wet oxidation (WI/2082 Issue 5)

Polonium-208 was added to the sample as an internal tracer, and then co precipitated with ferric hydroxide. The polonium in the sample was converted to the chloride form by treating with hydrochloric acid. The solution was then spontaneously deposited on a silver disc. This silver disc was measured by alpha spectrometry to determine the ratio of Po-210 to Po-208.

Tritium in water (WI/2093 Issue 5)

The sample was treated by alkaline distillation in the presence of sodium thiosulphate to hold back most quenching materials, as well as inorganic radiocarbon and radioiodine. An aliquot of the distillate was mixed with liquid scintillation cocktail and the tritium content was measured by beta spectrometry on a calibrated low-level liquid scintillation counter. Tritiated water standards were used to produce a quench correction curve and thus, calculate efficiency.

Thorium isotopes in water (WI/2119 Issue 5)

The water sample was acidified. Ion-exchange chromatography was used to purify the thorium which was then electrodeposited onto stainless-steel discs. Measurement of the thorium isotopes was effected by alpha-spectrometry.



Test Report Series RG 2568: Page 2 of 5



Customer Reference	Laboratory Reference	Tritium
BH8F-003	RG2568	< 10
BH8F-001	RG2569	< 10
BH8F-002	RG2570	< 10
BH8S-001	RG2571	< 10
BH8S-002	RG2572	< 10

Results for the determination of Tritium in Water

Notes:

- 1. Result is presented as Bq I⁻¹ per sample as received and is decay corrected to the reference date (12.33 years half life for Tritium).
- Uncertainties are quoted at 2 s.d. based on expanded uncertainties.
 LoD for tritium 10 Bq l⁻¹.

Results for the determination of Plutonium in Water

Customer Reference	Laboratory Reference	²³⁹⁺²⁴⁰ Pu	²³⁸ Pu		
BH8S-002	RG 2572	< 0.02	< 0.02		

Notes:

- 1. Results are presented as Bq l^{-1} per sample as received.
- 2. Uncertainties are quoted at 2 SD based on expanded uncertainties.

Results for the determination of Uranium in Water

Customer Reference	Laboratory Reference	²³⁸ U	²³⁵ U	²³⁴ U
BH8S-002	RG 2572	< 0.003	< 0.004	< 0.004

Notes:

1. Results are presented as Bq l^{-1} per sample as received.

2. Uncertainties are quoted at 2 SD based on expanded uncertainties.



Test Report Series RG 2568: Page 3 of 5



Results for the determination of Thorium in Water

Customer Reference	Laboratory Reference	²²⁸ Th	²³⁰ Th	²³² Th
BH8S-002	RG 2572	< 0.06	< 0.02	< 0.02

Notes:

Results are presented as Bq l⁻¹ per sample as received.
 Uncertainties are quoted at 2 SD based on expanded uncertainties.

Results for the determination of Polonium in Water

Customer Reference	Laboratory Reference	²¹⁰ Po
BH8S-002	RG 2572	< 0.004

Notes:

Results are presented as Bq l⁻¹ per sample as received.
 Uncertainties are quoted at 2 SD based on expanded uncertainties.



Test Report Series RG 2568: Page 4 of 5



Gamma Spectrometry Results for Water

Customer Reference	Laboratory Reference	K-40	Mn-54	Co-60	Zn-65	Zr-95	Cs-134	Cs-137	Eu-152	TI-208	Pb-210
BH8F-003	RG2568	< 4	< 0.2	< 0.2	< 0.4	< 0.3	< 0.2	< 0.2	< 0.3	< 0.2	< 2
BH8F-002	RG2570	< 5	< 0.2	< 0.2	< 0.4	< 0.3	< 0.2	< 0.2	< 0.3	< 0.3	< 2
BH8S-002	RG2572	< 3	< 0.2	< 0.2	< 0.6	< 0.2	< 0.2	< 0.2	< 0.2	< 0.4	< 2

Customer Reference	Laboratory Reference	Pb-212	Bi-212	Pb-214	Bi-214	[†] Ra-226	Ac-228	Th-234	[†] U-235	Am-241
BH8F-003	RG2568	< 0.3	< 4	< 0.5	< 0.8	< 3	< 0.5	< 3	< 1	< 0.3
BH8F-002	RG2570	< 0.4	< 4	< 0.6	< 0.9	< 3	< 0.6	< 2	< 0.9	< 0.2
BH8S-002	RG2572	< 0.7	< 4	< 0.5	< 0.8	< 3	< 0.6	< 4	< 2	< 0.2

Notes:

1. Results are presented as Bq l⁻¹ sample as received.

2. Detector calibrations are based upon homogeneous standard solutions. For quantification purposes the samples are assumed to be homogeneous.

3. Results marked with a † are not UKAS accredited.

4. Due to the peaks for both ²²⁶Ra and ²³⁵U being at approximately 185keV, individual results cannot be accurately determined by the software. Therefore, please note that these results are guideline figures only, and if an accurate result for either nuclide is required this is better obtained by radiochemical analysis.

5. Results above LoD are reported to 2 significant figures.

6. Uncertainties are quoted at 2SD based on expanded uncertainties.



Test Report Series RG 2568: Page 5 of 5



Test Report: Series RG 2733

Radiochemical Analysis of Water

Prepared for Chris Warde RPS Planning & Development October 2008



Radiochemical Analysis of Water

Client: RPS Planning & Development Oxford Square Oxford St Newbury RG14 1JQ United Kingdom

Testing Facility: Harwell Scientifics 551 South Becquerel Avenue Harwell Science and Innovation Campus Chilton Didcot Oxon OX11 0TB

Laboratory Reference:	Series RG 2733
Customer Reference:	JER3996MENSA(AWE(B) BH8F-001
Quote Number:	CON-HAR-PD4215
Job Number:	E915
Samples Received:	29 September 2008
Analysis Completed:	07 October 2008
Checked by: Approved by:	
Approver's name: Job Title:	Claire Wells Analyst

Report Date: 07 October 2008



Test Report Series RG 2733: Page 1 of 3



Introduction

Please find enclosed the results for the analysis of your samples. The samples were received in good condition.

Experimental

Gross Alpha /Beta in Water (WI/2002 Issue 9)

An acidified water sample was concentrated by evaporation and sulphuric acid (specific gravity 1.84) added, the solution was then evaporated to dryness. The resulting solid material was ashed in a muffle furnace. An aliquot of the ground residue was used to prepare a uniform thickness source which was counted on a Berthold LB770 low-level proportional counter for 1500 minutes.

Tritium in Water (WI/2093 Issue 5)

The sample was treated by alkaline distillation in the presence of sodium thiosulphate to hold back most quenching materials, as well as inorganic radiocarbon and radioiodine. An aliquot of the distillate was mixed with liquid scintillation cocktail and the tritium content was measured by beta spectrometry on a calibrated low-level liquid scintillation counter. Tritiated water standards were used to produce a quench correction curve and thus, calculate efficiency.



Test Report Series RG 2733: Page 2 of 3



Customer Reference	Laboratory Reference	Gross Alpha	Gross Beta
BH8F-001	RG 2733	< 2	2.5 ± 0.4
BH8F-002	RG 2734	< 1	1.7 ± 0.2
BH8F-003	RG 2735	< 0.7	1.3 ± 0.2
BH8S-001	RG 2736	< 2	1.9 ± 0.3
BH8S-002	RG 2737	< 0.6	1.2 ± 0.2

Results for the Analysis of Gross Alpha/Beta in Water

Notes:

- 1. Results are presented as Bq I^{-1} per sample as received.
- LoD's for gross alpha and gross beta are 0.05 and 0.1 Bq l⁻¹, unless otherwise stated.
 Uncertainties are quoted at 2 SD based on expanded uncertainties
 LoD's cannot always be achieved due to the dissolved solid content of the sample.

Customer Reference	Laboratory Reference	Tritium
BH8F-001	RG 2733	< 10
BH8F-002	RG 2734	< 10
BH8F-003	RG 2735	< 10
BH8S-001	RG 2736	< 10
BH8S-002	RG 2737	< 10

Results for the Analysis of Tritium in Water

Notes:

- 1. Result is presented as Bq I⁻¹ per sample as received and is decay corrected to the reference date (12.33 years half life for Tritium).
- LoD for tritium 10 Bq l⁻¹.unless otherwise stated.
 Uncertainties are quoted at 2 SD based on expanded uncertainties.



Test Report Series RG 2733: Page 3 of 3



Test Report: Series RG 2832

Analysis of Gross Alpha/Beta in Water

Prepared for G Moore RPS Planning and Development Ltd October 2008



Analysis of Gross Alpha/Beta in Water

Client: RPS Planning and Development Ltd Park House Greyfriars Road Cardiff CF10 3AF United Kingdom

Testing Facility: Harwell Scientifics 551 South Becquerel Avenue Harwell Science and Innovation Campus Chilton Didcot Oxon OX11 0TB

Laboratory Reference:	Series RG 2832
Customer Reference:	BH8F-001
Quote Number:	ENR-HAR-4341
Job Number:	E915
Samples Received:	06 October 2008
Analysis Completed:	13 October 2008
Checked by	

Checked by: Approved by: Approver's name: Garry Prior Job Title: Principal Analyst Report Date: 13 October 2008



Test Report Series RG2832: Page 1 of 2



Introduction

Please find enclosed the results for the analysis of your samples. The samples were received in good condition.

Experimental

Gross Alpha /Beta in Water (WI/2002 Issue 9)

An acidified water sample was concentrated by evaporation and sulphuric acid (specific gravity 1.84) added, the solution was then evaporated to dryness. The resulting solid material was ashed in a muffle furnace. An aliquot of the ground residue was used to prepare a uniform thickness source which was counted on a Berthold LB770 low-level proportional counter for 1000 minutes.

Customer Reference	Laboratory Reference	Gross Alpha	Gross Beta
BH8F-001	RG 2832	< 3	1.8 ± 0.4
BH8F-002	RG 2833	< 2	2.5 ± 0.3
BH8F-003	RG 2834	< 3	3.4 ± 0.6
BH8S-001	RG 2835	< 2	5.2 ± 0.7
BH8S-002	RG 2836	< 0.7	1.3 ± 0.3

Results for the Analysis of Gross Alpha/Beta in Water

Notes:

- 1. Results are presented as $Bq l^{-1}$ per sample as received.
- LoD's for gross alpha and gross beta are 0.05 and 0.1 Bq l⁻¹, unless otherwise stated.
 Uncertainties are quoted at 2 s.d. based on expanded uncertainties
 LoD's cannot always be achieved due to the dissolved solid content of the sample.



Test Report Series RG2832: Page 2 of 2



Test Report: Series RG 2952

Radiochemical Analysis of Waters

Graham Moore RPS Planning & Development

November 2008



Radiochemical Analysis of Waters

Client: RPS Planning & Development Park House Greyfriars Road Cardiff CF10 3AF United Kingdom

Testing Facility: Harwell Scientifics 551 South Becquerel Avenue Harwell Science and Innovation Campus Chilton Didcot Oxon OX11 0TB

Laboratory Reference:	Series RG 2952
Customer Reference:	BH8S-001
Quote Number:	ENR-HAR-4341
Job Number:	E915
Samples Received:	16 October 2008
Analysis Completed:	10 November 2008
Checked by:	

Approved by: Approver's name: Garry Prior Job Title: Principal Analyst Report Date: 11 November 2008



Test Report Series RG 2952: Page 1 of 5



Introduction

Please find enclosed the results for the analysis of your samples. The samples were received in good condition.

Experimental

Radioactivity analysis by gamma ray spectrometry (WI/2029 Issue 7)

The measurement technique is based on the use of germanium detectors coupled to a computerized analytical system. The detectors are calibrated for efficiency using a mixed radionuclide standard, which covers an energy range of approximately 120-2000 keV. Efficiencies at lower energies are determined on an individual basis. Stored spectra are analysed using the software FITZPEAKS for photopeak identification and subsequent quantification.

Plutonium & Uranium isotopes in water (WI/2116 Issue 3)

The water sample was filtered to remove any solid material. The appropriate internal yield tracers were added and the sample boiled under reflux for approximately 1 hour to remove carbon dioxide. After co-precipitation of the nuclides of interest with iron (III) hydroxide, ion-exchange chromatography was then used to further purify and separate the uranium, and plutonium isotopes, which were then electrodeposited onto stainless-steel discs. Measurement of the uranium and plutonium isotopes was carried out by alphaspectrometry.

Polonium-210 by wet oxidation (WI/2082 Issue 5)

Polonium-208 was added to the sample as an internal tracer, and then co precipitated with ferric hydroxide. The polonium in the sample was converted to the chloride form by treating with hydrochloric acid. The solution was then spontaneously deposited on a silver disc. This silver disc was measured by alpha spectrometry to determine the ratio of Po-210 to Po-208.

Tritium in water (WI/2093 Issue 5)

The sample was treated by alkaline distillation in the presence of sodium thiosulphate to hold back most quenching materials, as well as inorganic radiocarbon and radioiodine. An aliquot of the distillate was mixed with liquid scintillation cocktail and the tritium content was measured by beta spectrometry on a calibrated low-level liquid scintillation counter. Tritiated water standards were used to produce a quench correction curve and thus, calculate efficiency.

Thorium isotopes in water (WI/2119 Issue 5)

The water sample was acidified. Ion-exchange chromatography was used to purify the thorium which was then electrodeposited onto stainless-steel discs. Measurement of the thorium isotopes was effected by alpha-spectrometry.



Test Report Series RG 2952: Page 2 of 5



Customer Reference	Laboratory Reference	Tritium
BH8F-001	RG 2954	< 10
BH8F-003	RG 2955	< 10
BH8S-001	RG 2956	< 10

Results for the determination of Tritium in Waters

Notes:

- 1. Result is presented as Bq l⁻¹ per sample as received and is decay corrected to the reference date (12.33 years half life for Tritium).
- 2. Uncertainties are quoted at 2 s.d. based on expanded uncertainties.
- 3. LoD for tritium 10 $\dot{B}q l^{-1}$.

Results for the determination of Plutonium in Waters

Customer Reference	Laboratory Reference	²³⁹⁺²⁴⁰ Pu	²³⁸ Pu	
BH8S-001	RG 2952	< 0.003	< 0.005	
BH8F-001	RG 2953	< 0.006	< 0.007	
BH8F-002	RG 2954	< 0.004	< 0.004	
BH8F-003	RG 2955	< 0.003	< 0.005	
BH8S-001	RG 2956	< 0.007	< 0.01	

Notes:

1. Results are presented as Bq I^{-1} per sample as received.

2. Uncertainties are quoted at 2 SD based on expanded uncertainties.

Results for the determination of Uranium in Waters

Customer Reference	Laboratory Reference	²³⁸ U	²³⁵ U	²³⁴ U	
BH8S-001	RG 2952	0.14 ± 0.01	< 0.006	0.18 ± 0.01	
BH8F-001	RG 2953	0.083 ± 0.009	< 0.003	0.10 ± 0.01	
BH8F-002	RG 2954	0.043 ± 0.005	< 0.004	0.078 ± 0.008	
BH8F-003	RG 2955	0.16 ± 0.01	< 0.006	0.22 ± 0.02	
BH8S-001	RG 2956	0.21 ± 0.02	< 0.006	0.30 ± 0.02	

Notes:

1. Results are presented as Bq I^{-1} per sample as received.

2. Uncertainties are quoted at 2 SD based on expanded uncertainties.



Test Report Series RG 2952: Page 3 of 5



Customer Reference	Laboratory Reference	²³² Th	²³⁰ Th	²²⁸ Th	
BH8S-001	RG 2952	0.015 ± 0.003	< 0.005	< 0.005	
BH8F-001	RG 2953	< 0.002	< 0.003	< 0.005	
BH8F-002	RG 2954	< 0.002	< 0.002	< 0.004	
BH8F-003	RG 2955	< 0.004	< 0.002	< 0.003	
BH8S-001	RG 2956	< 0.002	< 0.003	< 0.004	

Results for the determination of Thorium in Waters

Notes:

Results are presented as Bq l⁻¹ per sample as received.
 Uncertainties are quoted at 2 SD based on expanded uncertainties.

Results for the determination of Polonium in Waters

Customer Reference	Laboratory Reference	²¹⁰ Po		
BH8S-001	RG 2952	< 0.003		
BH8F-001	RG 2953	0.01 ± 0.003		
BH8F-002	RG 2954	< 0.002		
BH8F-003	RG 2955	< 0.004		
BH8S-001	RG 2956	< 0.003		

Notes:

Results are presented as Bq l⁻¹ per sample as received.
 Uncertainties are quoted at 2 SD based on expanded uncertainties.



Test Report Series RG 2952: Page 4 of 5



Gamma Spectrometry Results for Waters

Customer Reference	Laboratory Reference	K-40	Mn-54	Co-60	Zn-65	Zr-95	Cs-134	Cs-137	Eu-152	TI-208	Pb-210
BH8F-001	RG 2954	11 ± 3	< 0.2	< 0.2	< 0.3	< 0.4	< 0.2	< 0.2	< 0.2	< 0.4	< 3
BH8F-003	RG 2955	< 7	< 0.2	< 0.2	< 0.5	< 0.3	< 0.2	< 0.2	< 0.4	< 0.7	< 5
BH8S-001	RG 2956	< 4	< 0.2	< 0.2	< 0.4	< 0.4	< 0.2	< 0.2	< 0.3	< 0.6	< 4

Customer Reference	Laboratory Reference	Pb-212	Bi-212	Pb-214	Bi-214	†Ra-226	Ac-228	Th-234	[†] U-235	Am-241
BH8F-001	RG 2954	< 0.8	< 5	< 0.9	< 1	< 5	< 0.9	< 4	< 2	< 0.2
BH8F-003	RG 2955	< 0.8	< 4	< 2	< 2	< 8	< 2	< 3	< 2	< 0.3
BH8S-001	RG 2956	< 0.4	< 4	< 0.6	< 0.7	< 3	< 2	< 3	< 0.6	< 0.2

Notes:

- 1. Results are presented as Bq l⁻¹ sample as received.
- 2. Detector calibrations are based upon homogeneous standard solutions. For quantification purposes the samples are assumed to be homogeneous.
- 3. Results marked with a † are not UKAS accredited.
- 4. Due to the peaks for both ²²⁶Ra and ²³⁵U being at approximately 185keV, individual results cannot be accurately determined by the software. Therefore, please note that these results are guideline figures only, and if an accurate result for either nuclide is required this is better obtained by radiochemical analysis.
- 5. Results above LoD are reported to 2 significant figures.
- 6. Uncertainties are quoted at 2SD based on expanded uncertainties.



Test Report Series RG 2952: Page 5 of 5
Appendix I

Chemical Results – Waters



TEST REPORT WATER SAMPLE ANALYSIS



TES Report No. EXR/087954 (Ver. 1)

RPS Consultants Park House **Greyfriars Road** Cardiff CF10 3AF

Site: 8S8F Investigation

The 5 samples described in this report were logged for analysis by TES Bretby on 12-Sep-2008. The analysis was completed by: 03-Oct-2008

Tests where the accreditation is set to N or No, and any individual data items marked with a * are not UKAS accredited Any opinions or interpretations expressed herein are outside the scope of any UKAS accreditation held by TES Bretby Laboratories.

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 4) Table of GRO Results (Page 5) Table of PAH (MS-SIM) (10) Results (Pages 6 to 10) Table of TPH (Si) banding (0.01) (Page 11) GC-FID Chromatograms (Pages 12 to 22) Table of VOC (HSA) Results (Pages 23 to 37) Table of VOC (Tics) Results (Pages 38 to 52) Table of Report Notes (Page 53)

On behalf of **TES Bretby :** J Elstub

1.Elles

Project Co-ordinator

Date of Issue: 03-Oct-2008

Tests marked '^' have been subcontracted to another laboratory.

TES Bretby accepts no responsibility for any sampling not carried out by our personnel.

TES ID Number EX	Metho Method Reportir UKAS Ac	Units: d Codes: g Limits: credited: Sample Date	WSLM3 yes PH units	mg/l Calc yes Total Hardness as CaCO3	mg/l CPWATVAF 3.0 yes Total Sulphur as SO4 (Dissolved)	mg/l CPWATVAF 1.0 yes Calcium as Ca (Dissolved) a	mg/l CPWATVAF 1.0 yes Magnesium as Mg (Dissolved) ¿	mg/l ICPMSW 0.001 yes Nickel as Ni (Dissolved)	mg/l ICPMSW 0.001 yes Chromium as Cr (Dissolved)	mg/l ICPMSW 0.0001 yes Cadmium as Cd (Dissolved)	mg/l ICPMSW 0.001 yes Copper as Cu (Dissolved)	mg/l ICPMSW 0.001 yes Lead as Pb (Dissolved)	mg/l ICPMSW 0.002 yes Zinc as Zn (Dissolved)	mg/l ICPMSW 0.002 yes Manganese as Mn (Dissolved)	mg/l KONEFE 0.01 yes Ferric Iron as Fe(3+)	mg/l KONEFE 0.01 yes Ferrous Iron as Fe(2+)	mg/l KONEFE 0.01 yes Iron as Fe:(Total)	mg/l ICPMSW 0.001 yes Arsenic as As (Dissolved)
- 0831577 0831578 0831580 0831581 0831582	BH8S-001 BH8S-002 BH8F-001 BH8F-002 BH8F-003	05-Sep-08 05-Sep-08 05-Sep-08 05-Sep-08 05-Sep-08	6.8 7.2 7.0 7.4 6.6	2360 1080 1480 970 4420	2020 2020 1020 1220 816 3100 	484 210 284 187 573	279 136 186 122 725	0.028 0.005 0.024 0.002 0.044	0.005 0.005 0.004 0.004 0.011	0.0003 <0.0001 <0.0001 <0.0005	0.002 <0.001 0.001 <0.001 0.005	<0.001 <0.001 <0.001 <0.001 <0.001	0.017 0.006 0.012 0.005 0.014					0.001 0.002 0.002 <0.001 0.002
	TES Bretby PO Box 100, Bretby Business Park, Burton-on-Trent, Staffordshire, DE15 0XD Tel +44 (0) 1283 554400 Fax +44 (0) 1283 554422		Client N Contac	Jame	RPS Co Mr G Moo	onsultant ore	ts nvesti	gatio	n			Date Prin Report N Table Nu	Vater S Nater S Number Jumber	ample	Analys	03-Oct-08 (R/087954 1	TL Bre	ES etby

		Units :	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l
	Metho	d Codes :	CPWATVA	R ICPMSW	ICPMSW	KONENS	KONENS	KONENS	KONENS	WSLM11	WSLM13	VOCSWHS	ACPWATVA	RPAHSWSIN	ICPWATVAR	WSLM20	GROHSA	TPHFID
	Method Reportin	ng Limits :	0.01	0.0001	0.001	0.01	0.01	0.2	0.01	5	0.1	1	0.01	0.01	0.01	2	0.1	0.01
	UKAS AG	createa :	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	no	no	no	no	no	no
TES ID Number EX/	Client Sample Description	Sample Date	Boron as B (Dissolved) a	Mercury as Hg (Dissolved)	Selenium as Se (Dissolved)	Ammoniacal Nitrogen as N	Nitrite as N	Nitrate as N	Phosphate as P	Chemical Oxygen Demand	Total Organic Carbon	Volatile Organic Compounds	Barium as Ba (Dissolved) a	PAH MS-SIM (16)	Beryllium as Be (Dissolved) a	Biochemical Oxygen Demand	GRO-HSA (AA)	TPH GC (0.01)
- 0831577	BH8S-001	05-Sep-08	0.31	<0.0001	0.003	0.27	0.01	0.5	0.21		4.9		0.07	Reg	<0.01			0.02
0831578	BH8S-002	05-Sep-08	0.42	<0.0001	0.002	11	<0.01	<0.2	0.13		5.2		0.08	Reg	<0.01			0.02
0831580	BH8E-001	05-Sep-08	0.32	<0.0001	0.002	0.12	<0.01	1.3	0.10		5.3		0.00	Reg	<0.01			0.02
0031500		05-Sop-08	0.32	<0.0001	-0.001	1.1	<0.01	-0.2	0.27		4.2		0.10	Rog	<0.01			0.01
0031501	BI 18F-002	05-Sep-00	0.50	<0.0001	0.005	1.1	0.01	<0.2	0.10		4.3		0.04	Dec	<0.01			0.09
TES Bretby Client Name PO Box 100, Bretby Business Park, Contact Burton-on-Trent, Staffordshire, DE15 0XD Tel +44 (0) 1283 554400 Fax +44 (0) 1283 554422 Fax +44 (0) 1283 554422			lame	RPS Co	onsultant ^{ore} FCE Ir	nvesti	igatio	n			Date Pri Report I Table N	Nater S Inted Number umber	ample	Analysi	S 03-Oct-08 R/087954 1	TE Bre	tby	

Customer and Site Details: Sample Details: LIMS ID Number: QC Batch Number: Quantitation File: Directory: Dilution: RPS Consultants: TCE InvestigationBH8S-001Job NumEX0831577Date Boo825Date ExtInitial CalibrationDate Ana1002PAH_GC8\Matrix:2.5Ext Meth

Job Number:W08_7954Date Booked in:12-Sep-08Date Extracted:24-Sep-08Date Analysed:02-Oct-08Matrix:WaterExt Method:Sep. Funnel

UKAS accredited?: No

Target Compounds	CAS #	R.T.	Concentration	% Fit
		(min)	ug/l	
Naphthalene	91-20-3	3.30	0.041	75
Acenaphthylene	208-96-8	4.34	0.040	100
Acenaphthene	83-32-9	4.46	0.105	М
Fluorene	86-73-7	4.84	0.041	М
Phenanthrene	85-01-8	5.68	0.047	93
Anthracene	120-12-7	5.72	0.044	95
Fluoranthene	206-44-0	7.00	0.045	69
Pyrene	129-00-0	7.29	0.046	79
Benzo[a]anthracene	56-55-3	8.96	0.047	93
Chrysene	218-01-9	9.01	0.040	97
Benzo[b]fluoranthene	205-99-2	10.48	0.041	95
Benzo[k]fluoranthene	207-08-9	10.52	0.040	94
Benzo[a]pyrene	50-32-8	10.90	0.047	М
Indeno[1,2,3-cd]pyrene	193-39-5	12.27	0.042	90
Dibenzo[a,h]anthracene	53-70-3	12.31	0.042	93
Benzo[g,h,i]perylene	191-24-2	12.56	0.044	91
Total (USEPA16) PAHs	-	-	0.752	-

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	216
Acenaphthene-d10	224
Phenanthrene-d10	220
Chrysene-d12	227
Perylene-d12	235

Surrogates	% Rec
Nitrobenzene-d5	N.D
2-Fluorobiphenyl	48
Terphenyl-d14	70

Customer and Site Details: Sample Details: LIMS ID Number: QC Batch Number: Quantitation File: Directory: Dilution: RPS Consultants: TCE InvestigationBH8S-002Job NumEX0831578Date Boo825Date ExtInitial CalibrationDate Ana1002PAH_GC8\Matrix:2.5Ext Meth

Job Number:W08_7954Jate Booked in:12-Sep-08Date Extracted:24-Sep-08Date Analysed:02-Oct-08Matrix:WaterExt Method:Sep. Funnel

UKAS accredited?: No

Target Compounds	CAS #	R.T.	Concentration	% Fit
		(min)	ug/l	
Naphthalene	91-20-3	3.30	0.028	М
Acenaphthylene	208-96-8	-	< 0.010	-
Acenaphthene	83-32-9	-	< 0.010	-
Fluorene	86-73-7	-	< 0.010	-
Phenanthrene	85-01-8	5.67	0.013	91
Anthracene	120-12-7	-	< 0.010	-
Fluoranthene	206-44-0	-	< 0.010	-
Pyrene	129-00-0	-	< 0.010	-
Benzo[a]anthracene	56-55-3	-	< 0.010	-
Chrysene	218-01-9	-	< 0.010	-
Benzo[b]fluoranthene	205-99-2	-	< 0.010	-
Benzo[k]fluoranthene	207-08-9	-	< 0.010	-
Benzo[a]pyrene	50-32-8	-	< 0.010	-
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.010	-
Dibenzo[a,h]anthracene	53-70-3	-	< 0.010	-
Benzo[g,h,i]perylene	191-24-2	-	< 0.010	-
Total (USEPA16) PAHs	-	-	< 0.181	-

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	213
Acenaphthene-d10	224
Phenanthrene-d10	222
Chrysene-d12	225
Perylene-d12	232

Surrogates	% Rec
Nitrobenzene-d5	N.D
2-Fluorobiphenyl	63
Terphenyl-d14	84

Customer and Site Details: Sample Details: LIMS ID Number: **QC Batch Number: Quantitation File:** Directory: **Dilution:**

RPS Consultants: TCE Investigation BH8F-001 EX0831580 825 Initial Calibration 1002PAH GC8\ 2.5

Job Number: Date Booked in: Date Extracted: Date Analysed: Matrix: Water Ext Method:

W08_7954 12-Sep-08 24-Sep-08 02-Oct-08 Sep. Funnel

UKAS accredited?: No

Target Compounds	CAS #	R.T.	Concentration	% Fit
		(min)	ug/l	
Naphthalene	91-20-3	-	< 0.010	-
Acenaphthylene	208-96-8	-	< 0.010	-
Acenaphthene	83-32-9	-	< 0.010	-
Fluorene	86-73-7	-	< 0.010	-
Phenanthrene	85-01-8	5.68	0.011	94
Anthracene	120-12-7	-	< 0.010	-
Fluoranthene	206-44-0	-	< 0.010	-
Pyrene	129-00-0	-	< 0.010	-
Benzo[a]anthracene	56-55-3	-	< 0.010	-
Chrysene	218-01-9	-	< 0.010	-
Benzo[b]fluoranthene	205-99-2	-	< 0.010	-
Benzo[k]fluoranthene	207-08-9	-	< 0.010	-
Benzo[a]pyrene	50-32-8	-	< 0.010	-
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.010	-
Dibenzo[a,h]anthracene	53-70-3	-	< 0.010	-
Benzo[g,h,i]perylene	191-24-2	-	< 0.010	-
Total (USEPA16) PAHs	-	-	< 0.161	-

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	171
Acenaphthene-d10	178
Phenanthrene-d10	177
Chrysene-d12	179
Perylene-d12	182

Surrogates	% Rec
Nitrobenzene-d5	N.D
2-Fluorobiphenyl	50
Terphenyl-d14	75

Customer and Site Details: Sample Details: LIMS ID Number: QC Batch Number: Quantitation File: Directory: Dilution: RPS Consultants: TCE InvestigationBH8F-002Job NumEX0831581Date Boo825Date ExtInitial CalibrationDate Ana0930PAH_GC8\Matrix:2.5Ext Meth

Job Number: W08_7954 Date Booked in: 12-Sep-08 Date Extracted: 24-Sep-08 Date Analysed: 01-Oct-08 Matrix: Water Ext Method: Sep. Funnel

UKAS accredited?: No

Target Compounds	CAS #	R.T.	Concentration	% Fit
		(min)	ug/l	
Naphthalene	91-20-3	3.30	0.022	М
Acenaphthylene	208-96-8	-	< 0.010	-
Acenaphthene	83-32-9	-	< 0.010	-
Fluorene	86-73-7	-	< 0.010	-
Phenanthrene	85-01-8	5.67	0.023	94
Anthracene	120-12-7	-	< 0.010	-
Fluoranthene	206-44-0	-	< 0.010	-
Pyrene	129-00-0	-	< 0.010	-
Benzo[a]anthracene	56-55-3	-	< 0.010	-
Chrysene	218-01-9	-	< 0.010	-
Benzo[b]fluoranthene	205-99-2	-	< 0.010	-
Benzo[k]fluoranthene	207-08-9	-	< 0.010	-
Benzo[a]pyrene	50-32-8	-	< 0.010	-
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.010	-
Dibenzo[a,h]anthracene	53-70-3	-	< 0.010	-
Benzo[g,h,i]perylene	191-24-2	-	< 0.010	-
Total (USEPA16) PAHs	-	-	< 0.185	-

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	101
Acenaphthene-d10	104
Phenanthrene-d10	106
Chrysene-d12	117
Perylene-d12	116

Surrogates	% Rec
Nitrobenzene-d5	N.D
2-Fluorobiphenyl	60
Terphenyl-d14	79

Customer and Site Details: Sample Details: LIMS ID Number: QC Batch Number: Quantitation File: Directory: Dilution: RPS Consultants: TCE InvestigationBH8F-003Job NumEX0831582Date Boo825Date ExtInitial CalibrationDate Ana0930PAH_GC8\Matrix:2.5Ext Meth

Job Number:W08_7954Jate Booked in:12-Sep-08Date Extracted:24-Sep-08Date Analysed:01-Oct-08Matrix:WaterExt Method:Sep. Funnel

UKAS accredited?: No

Target Compounds	CAS #	R.T.	Concentration	% Fit
		(min)	ug/l	
Naphthalene	91-20-3	-	< 0.010	-
Acenaphthylene	208-96-8	-	< 0.010	-
Acenaphthene	83-32-9	-	< 0.010	-
Fluorene	86-73-7	-	< 0.010	-
Phenanthrene	85-01-8	-	< 0.010	-
Anthracene	120-12-7	-	< 0.010	-
Fluoranthene	206-44-0	-	< 0.010	-
Pyrene	129-00-0	-	< 0.010	-
Benzo[a]anthracene	56-55-3	-	< 0.010	-
Chrysene	218-01-9	-	< 0.010	-
Benzo[b]fluoranthene	205-99-2	-	< 0.010	-
Benzo[k]fluoranthene	207-08-9	-	< 0.010	-
Benzo[a]pyrene	50-32-8	-	< 0.010	-
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.010	-
Dibenzo[a,h]anthracene	53-70-3	-	< 0.010	-
Benzo[g,h,i]perylene	191-24-2	-	< 0.010	-
Total (USEPA16) PAHs	-	-	< 0.160	-

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	113
Acenaphthene-d10	117
Phenanthrene-d10	118
Chrysene-d12	121
Perylene-d12	120

Surrogates	% Rec
Nitrobenzene-d5	N.D
2-Fluorobiphenyl	60
Terphenyl-d14	89











Report Notes

Soil/Solid analysis specific:

Results expressed as mg/kg on an air dried basis unless stated otherwise S04 analysis not conducted in accordance with BS1377 unless otherwise stated Water Soluble Sulphate on 2:1 water:soil extract AR denotes analysis conducted on the As Received sample

Water analysis specific:

Results expressed as mg/l unless stated otherwise

Oil analysis specific:

Results expressed as mg/kg unless stated otherwise S.G. expressed as $g/cm^3@ 15^{\circ}C$

Filter analysis specific:

Results expressed as mg on filter unless stated otherwise

VOC analysis specific:

Explanatory notes for data flagging

- **U** = undetected above reporting limit
- J = concentration at instrument was below lowest calibration standard
- E = concentration at instrument was above top calibration standard
- **B** = compound was detected in method blank

Gas (Tedlar bag) analysis specific:

Results expressed as ug/l unless stated otherwise

Air (Carbon tube) analysis specific:

Results expressed as ug on tube unless stated otherwise

Asbestos analysis specific:

CH denotes Chrysotile CR denotes Crocidolite AM denotes Amosite NADIS denotes No Asbestos Detected in Sample NBFO denotes No Bulk fibres Observed

General notes:

^ this analysis was subcontracted to another laboratory

\$ Within laboratory tolerances

\$\$ unable to analyse due to nature of sample

¥ Results for guidance only, possible interference

& Blank corrected

I.S insufficient sample for analysis

Intf Unable to analyse due to interferences

N.D Not determined

N.R Not recorded

N.Det Not detected

 $\ensuremath{\text{Req}}$ Analysis Requested, see attached sheets for results

P Raised detection limit due to nature of sample

* denotes that all accreditation has been removed by the laboratory for this result.

‡ denotes that Mcerts accreditation has been removed by the laboratory for this result.

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory

may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected.

If you require further details of the circumstances leading to the removal of the accreditation from any data item please do not hesitate to contact the laboratory



TEST REPORT WATER SAMPLE ANALYSIS



TES Report No. EXR/088248 (Ver. 1)

RPS Consultants Park House **Greyfriars Road** Cardiff CF10 3AF

Site: TCE Investigation

The 4 samples described in this report were logged for analysis by TES Bretby on 22-Sep-2008. The analysis was completed by: 09-Oct-2008

Tests where the accreditation is set to N or No, and any individual data items marked with a * are not UKAS accredited Any opinions or interpretations expressed herein are outside the scope of any UKAS accreditation held by TES Bretby Laboratories.

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 4) Table of GRO Results (Page 5) Table of PAH (MS-SIM) (10) Results (Pages 6 to 9) Table of TPH (Si) banding (0.01) (Page 10) GC-FID Chromatograms (Pages 11 to 18) Table of VOC (HSA) Results (Pages 19 to 31) Table of VOC (Tics) Results (Pages 32 to 44) Table of Report Notes (Page 45)

On behalf of **TES Bretby :** J Elstub

1.Elles

Project Co-ordinator

Date of Issue: 09-Oct-2008

Tests marked '^' have been subcontracted to another laboratory.

TES Bretby accepts no responsibility for any sampling not carried out by our personnel.

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	Method	Units : Codes :	W/SI M3	mg/i														
	Method Reporting	Limits :	VV OLIVIO	Calc	3.0	1.0	1.0	0.001	0.001	0.0001	0.001	0.001	0.002	0.002	0.01	0.01	0.01	0.001
	UKAS Accr	edited :	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
TES ID Number EX	Client Sample Description	Sample Date	pH units	Total Hardness as CaCO3	Total Sulphur as SO4 (Dissolved) a	Calcium as Ca (Dissolved) a	Magnesium as Mg (Dissolved) a	Nickel as Ni (Dissolved)	Chromium as Cr (Dissolved)	Cadmium as Cd (Dissolved)	Copper as Cu (Dissolved)	Lead as Pb (Dissolved)	Zinc as Zn (Dissolved)	Manganese as Mn (Dissolved)	Ferric Iron as Fe(3+)	Ferrous Iron as Fe(2+)	Iron as Fe:(Total)	Arsenic as As (Dissolved)
0832764	BH8S-001	17-Sep-08	6.9	2290	2020	466	273	0.019	0.006	0.0001	<0.001	<0.001	0.010					0.005
0832765	BH8S-002	17-Sep-08	7.1	1470	1240	261	198	0.005	0.006	<0.0001	<0.001	<0.001	0.005					0.004
0832766	BH8F-002	17-Sep-08	7.2	1280	1240	229	171	0.002	0.005	<0.0001	<0.001	<0.001	0.003					0.003
0832767	BH8F-003	17-Sep-08	6.6	3900	2960	507	638	0.031	0.009	0.0003	0.002	<0.001	0.016					0.004
	TES Bretby PO Box 100, Bretby Business Park,		Client Name RPS Consultants Water Sample Analysis Contact Mr G Moore							TE	<u>ES</u>							
	Burton-on-Trent, Staffordshire, DE15 0XD Tel +44 (0) 1283 554400 Fax +44 (0) 1283 554422	Date Printed 09-Oct-08 Report Number EXR/088248 Table Number 1						Bre	etby									

		Units :	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l
	Method	Codes :	CPWATVA	R ICPMSW	ICPMSW	KONENS	KONENS	KONENS	KONENS	WSLM11	WSLM13	VOCSWHSA		PAHSWSIN	ICPWATVAR	WSLM20	GROHSA	TPHFID
	Method Reporting	g Limits :	0.01	0.0001	0.001	0.01	0.01	0.2	0.01	5	0.1	1	0.01	0.01	0.01	2	0.1	0.01
	UKAS Acc	credited :	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	no	no	no	no	no	no
TES ID Number EX	Client Sample Description	Sample Date	Boron as B (Dissolved) a	Mercury as Hg (Dissolved)	Selenium as Se (Dissolved)	Ammoniacal Nitrogen as N	Nitrite as N	Nitrate as N	Phosphate as P	Chemical Oxygen Demand	Total Organic Carbon	Volatile Organic Compounds	Barium as Ba (Dissolved) a	PAH MS-SIM (16)	Beryllium as Be (Dissolved) a	Biochemical Oxygen Demand	GRO-HSA (AA)	TPH GC (0.01)
0832764	BH8S-001	17-Sep-08	0.32	<0.0001	0.002	0.22	0.02	<0.2	<0.01		4.4		0.06	Req	<0.01			0.04
0832765	BH8S-002	17-Sep-08	0.50	<0.0001	0.002	1.4	<0.01	<0.2	<0.01		5.1		0.08	Req	<0.01			0.06
0832766	BH8F-002	17-Sep-08	0.42	<0.0001	0.001	1.1	<0.01	<0.2	<0.01		4.5		0.04	Req	<0.01			0.1
0832767	BH8F-003	17-Sep-08	0.57	<0.0001	0.005	0.16	0.06	1.4	0.07		7.2		0.06	Req	<0.01			0.04
	TES Bretby PO Box 100, Bretby Business Park, Burton-on-Trent, Staffordshire, DE15 0XD Tel +44 (0) 1283 554400 Fax +44 (0) 1283 554422		Client M	Name t	e RPS Consultants Water Sample Analysis Mr G Moore						09-Oct-08 (R/088248 1	<i>TE</i> Bre	:S tby					

Customer and Site Details: Sample Details: LIMS ID Number: QC Batch Number: Quantitation File: Directory: Dilution: RPS Consultants: TCE InvestigationBH8S-001Job NumEX0832764Date Boo0859Date ExtInitial CalibrationDate Ana006PAH_MS14\Matrix:2.5Ext Meth

Job Number:WCJob Number:WCDate Booked in:22-Date Extracted:06-Date Analysed:06-Matrix:WaExt Method:Sep

W08_8248 22-Sep-08 06-Oct-08 06-Oct-08 Water Sep. Funnel

UKAS accredited?: No

Target Compounds	CAS #	R.T.	Concentration	% Fit
		(min)	ug/l	
Naphthalene	91-20-3	-	< 0.010	-
Acenaphthylene	208-96-8	-	< 0.010	-
Acenaphthene	83-32-9	-	< 0.010	-
Fluorene	86-73-7	-	< 0.010	-
Phenanthrene	85-01-8	-	< 0.010	-
Anthracene	120-12-7	-	< 0.010	-
Fluoranthene	206-44-0	-	< 0.010	-
Pyrene	129-00-0	-	< 0.010	-
Benzo[a]anthracene	56-55-3	-	< 0.010	-
Chrysene	218-01-9	-	< 0.010	-
Benzo[b]fluoranthene	205-99-2	-	< 0.010	-
Benzo[k]fluoranthene	207-08-9	-	< 0.010	-
Benzo[a]pyrene	50-32-8	-	< 0.010	-
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.010	-
Dibenzo[a,h]anthracene	53-70-3	-	< 0.010	-
Benzo[g,h,i]perylene	191-24-2	-	< 0.010	_
Total (USEPA16) PAHs	-	-	< 0.160	-

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	105
Acenaphthene-d10	102
Phenanthrene-d10	101
Chrysene-d12	102
Perylene-d12	90

Surrogates	% Rec
Nitrobenzene-d5	N.D
2-Fluorobiphenyl	53
Terphenyl-d14	86

Customer and Site Details: Sample Details: LIMS ID Number: QC Batch Number: Quantitation File: Directory: Dilution: RPS Consultants: TCE InvestigationBH8S-002Job NumEX0832765Date Boo0859Date ExtInitial CalibrationDate Ana006PAH_MS14\Matrix:2.5Ext Meth

estigationJob Number:W08Date Booked in:22-5Date Extracted:06-0Date Analysed:06-0Matrix:WatExt Method:Sep

W08_8248 22-Sep-08 06-Oct-08 06-Oct-08 Water Sep. Funnel

UKAS accredited?: No

Target Compounds	CAS #	R.T.	Concentration	% Fit
		(min)	ug/l	
Naphthalene	91-20-3	-	< 0.010	-
Acenaphthylene	208-96-8	-	< 0.010	-
Acenaphthene	83-32-9	-	< 0.010	-
Fluorene	86-73-7	-	< 0.010	-
Phenanthrene	85-01-8	-	< 0.010	-
Anthracene	120-12-7	-	< 0.010	-
Fluoranthene	206-44-0	-	< 0.010	-
Pyrene	129-00-0	-	< 0.010	-
Benzo[a]anthracene	56-55-3	-	< 0.010	-
Chrysene	218-01-9	-	< 0.010	-
Benzo[b]fluoranthene	205-99-2	-	< 0.010	-
Benzo[k]fluoranthene	207-08-9	-	< 0.010	-
Benzo[a]pyrene	50-32-8	-	< 0.010	-
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.010	-
Dibenzo[a,h]anthracene	53-70-3	-	< 0.010	-
Benzo[g,h,i]perylene	191-24-2	-	< 0.010	-
Total (USEPA16) PAHs	-	-	< 0.160	-

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	91
Acenaphthene-d10	88
Phenanthrene-d10	89
Chrysene-d12	88
Perylene-d12	76

Surrogates	% Rec
Nitrobenzene-d5	N.D
2-Fluorobiphenyl	37
Terphenyl-d14	46

Customer and Site Details: Sample Details: LIMS ID Number: QC Batch Number: Quantitation File: Directory: Dilution: RPS Consultants: TCE InvestigationBH8F-002Job NumEX0832766Date Boo0859Date ExtInitial CalibrationDate Ana006PAH_MS14\Matrix:2.5Ext Meth

estigationJob Number:W0Date Booked in:22-3Date Extracted:06-0Date Analysed:06-0Matrix:Wateria:Ext Method:Sep

W08_8248 22-Sep-08 06-Oct-08 06-Oct-08 Water Sep. Funnel

UKAS accredited?: No

Target Compounds	CAS #	R.T.	Concentration	% Fit
		(min)	ug/l	
Naphthalene	91-20-3	3.44	0.018	87
Acenaphthylene	208-96-8	-	< 0.010	-
Acenaphthene	83-32-9	-	< 0.010	-
Fluorene	86-73-7	-	< 0.010	-
Phenanthrene	85-01-8	5.86	0.013	92
Anthracene	120-12-7	-	< 0.010	-
Fluoranthene	206-44-0	-	< 0.010	-
Pyrene	129-00-0	-	< 0.010	-
Benzo[a]anthracene	56-55-3	-	< 0.010	-
Chrysene	218-01-9	-	< 0.010	-
Benzo[b]fluoranthene	205-99-2	-	< 0.010	-
Benzo[k]fluoranthene	207-08-9	-	< 0.010	-
Benzo[a]pyrene	50-32-8	-	< 0.010	-
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.010	-
Dibenzo[a,h]anthracene	53-70-3	-	< 0.010	-
Benzo[g,h,i]perylene	191-24-2	-	< 0.010	-
Total (USEPA16) PAHs	-	-	< 0.171	-

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	90
Acenaphthene-d10	89
Phenanthrene-d10	89
Chrysene-d12	86
Perylene-d12	73

Surrogates	% Rec
Nitrobenzene-d5	N.D
2-Fluorobiphenyl	38
Terphenyl-d14	44

Customer and Site Details: Sample Details: LIMS ID Number: QC Batch Number: Quantitation File: Directory: Dilution: RPS Consultants: TCE InvestigationBH8F-003Job NumEX0832767Date Boo0859Date ExtInitial CalibrationDate Ana006PAH_MS14\Matrix:2.5Ext Meth

estigationJob Number:WCDate Booked in:22-Date Extracted:06-Date Analysed:06-Matrix:WaExt Method:Sep

W08_8248 22-Sep-08 06-Oct-08 06-Oct-08 Water Sep. Funnel

UKAS accredited?: No

Target Compounds	CAS #	R.T.	Concentration	% Fit
		(min)	ug/l	
Naphthalene	91-20-3	-	< 0.010	-
Acenaphthylene	208-96-8	-	< 0.010	-
Acenaphthene	83-32-9	-	< 0.010	-
Fluorene	86-73-7	-	< 0.010	-
Phenanthrene	85-01-8	-	< 0.010	-
Anthracene	120-12-7	-	< 0.010	-
Fluoranthene	206-44-0	-	< 0.010	-
Pyrene	129-00-0	-	< 0.010	-
Benzo[a]anthracene	56-55-3	-	< 0.010	-
Chrysene	218-01-9	-	< 0.010	-
Benzo[b]fluoranthene	205-99-2	-	< 0.010	-
Benzo[k]fluoranthene	207-08-9	-	< 0.010	-
Benzo[a]pyrene	50-32-8	-	< 0.010	-
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.010	-
Dibenzo[a,h]anthracene	53-70-3	-	< 0.010	-
Benzo[g,h,i]perylene	191-24-2	-	< 0.010	-
Total (USEPA16) PAHs	-	-	< 0.160	-

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	91
Acenaphthene-d10	90
Phenanthrene-d10	89
Chrysene-d12	90
Perylene-d12	78

Surrogates	% Rec
Nitrobenzene-d5	N.D
2-Fluorobiphenyl	47
Terphenyl-d14	57









Report Notes

Soil/Solid analysis specific:

Results expressed as mg/kg on an air dried basis unless stated otherwise S04 analysis not conducted in accordance with BS1377 unless otherwise stated Water Soluble Sulphate on 2:1 water:soil extract AR denotes analysis conducted on the As Received sample

Water analysis specific:

Results expressed as mg/l unless stated otherwise

Oil analysis specific:

Results expressed as mg/kg unless stated otherwise S.G. expressed as $g/cm^3@ 15^{\circ}C$

Filter analysis specific:

Results expressed as mg on filter unless stated otherwise

VOC analysis specific:

Explanatory notes for data flagging

- **U** = undetected above reporting limit
- \mathbf{J} = concentration at instrument was below lowest calibration standard
- E = concentration at instrument was above top calibration standard
- **B** = compound was detected in method blank

Gas (Tedlar bag) analysis specific:

Results expressed as ug/l unless stated otherwise

Air (Carbon tube) analysis specific:

Results expressed as ug on tube unless stated otherwise

Asbestos analysis specific:

CH denotes Chrysotile CR denotes Crocidolite AM denotes Amosite NADIS denotes No Asbestos Detected in Sample NBFO denotes No Bulk fibres Observed

General notes:

^ this analysis was subcontracted to another laboratory

\$ Within laboratory tolerances

\$\$ unable to analyse due to nature of sample

¥ Results for guidance only, possible interference

& Blank corrected

I.S insufficient sample for analysis

Intf Unable to analyse due to interferences

N.D Not determined

N.R Not recorded

N.Det Not detected

Req Analysis Requested, see attached sheets for results

P Raised detection limit due to nature of sample

* denotes that all accreditation has been removed by the laboratory for this result.

‡ denotes that Mcerts accreditation has been removed by the laboratory for this result.

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory

may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected.

If you require further details of the circumstances leading to the removal of the accreditation from any data item please do not hesitate to contact the laboratory



TEST REPORT WATER SAMPLE ANALYSIS



TES Report No. EXR/088252 (Ver. 1)

RPS Consultants Park House Greyfriars Road Cardiff CF10 3AF

Site: 8S8F Investigation

The 1 sample described in this report was logged for analysis by TES Bretby on 22-Sep-2008. The analysis was completed by: 09-Oct-2008

Tests where the accreditation is set to N or No, and any individual data items marked with a * are not UKAS accredited Any opinions or interpretations expressed herein are outside the scope of any UKAS accreditation held by TES Bretby Laboratories.

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 4) Table of GRO Results (Page 5) Table of PAH (MS-SIM) (10) Results (Page 6) Table of TPH (Si) banding (0.01) (Page 7) GC-FID Chromatograms (Pages 8 to 10) Table of VOC (HSA) Results (Pages 11 to 27) Table of VOC (Tics) Results (Pages 28 to 44) Table of Report Notes (Page 45)

On behalf of TES Bretby : J Elstub

1.2/66

Project Co-ordinator

Date of Issue: 09-Oct-2008

Tests marked '^' have been subcontracted to another laboratory.

TES Bretby accepts no responsibility for any sampling not carried out by our personnel.

		Units :		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
	Method Reporting	Codes :	WSLM3	Calc	ICPWATVAI 3.0				ICPMSW	ICPMSW 0.0001	ICPMSW	ICPMSW	ICPMSW	ICPMSW	KONEFE	KONEFE	KONEFE	ICPMSW
	UKAS Accr	redited :	Ves	ves	Ves	Ves	Ves	Ves	Ves	Ves	Ves	Ves	Ves	Ves	Ves	Ves	Ves	Ves
TES ID Number EX/	Client Sample Description	Sample Date	pH units	Total Hardness as CaCO3	Total Sulphur as SO4 (Dissolved) a	Calcium as Ca (Dissolved) a	Magnesium as Mg (Dissolved) a	Nickel as Ni (Dissolved)	Chromium as Cr (Dissolved)	Cadmium as Cd (Dissolved)	Copper as Cu (Dissolved)	Lead as Pb (Dissolved)	Zinc as Zn (Dissolved)	Manganese as Mn (Dissolved)	Ferric Iron as Fe(3+)	Ferrous Iron as Fe(2+)	Iron as Fe:(Total)	Arsenic as As (Dissolved)
-		18 San 08	6.0	2610	2260	477	245	0.022	0.006	0.0003	0.008	-0.001	0.016					0.002
0032012		10-3ep-00	0.9	2010	2200	477	345	0.032	0.006	0.0003	0.006	<0.001	0.016					0.002
																		_
																		_
	TES Bretby		Client Na	ame	RPS C	onsultan	ts	1	1	1		v	Vater S	ample	Analys	is	TE	ESI
	PO Box 100, Bretby Business Park, Burton-on-Trent, Staffordshire, DE15 0XD Tel +44 (0) 1283 554400 Fax +44 (0) 1283 554422		<u>Contact</u>	Lact Mr G Moore Date Printed TCE Investigation Table Number				EX	<u>09-Oct-08</u> (R/088252 1	Bre	tby							

	Metho	Units :	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l WSI M11	mg/l WSI M13	ug/l		ug/l RPAHSW/SI	mg/l	mg/l	mg/l	mg/l
	Method Reporting	g Limits :	0.01	0.0001	0.001	0.01	0.01	0.2	0.01	5	0.1	1	0.01	0.01	0.01	2	0.1	0.01
	UKAS Ac	credited :	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	no	no	no	no	no	no
TES ID Number EX	Client Sample Description	Sample Date	Boron as B (Dissolved) a	Mercury as Hg (Dissolved)	Selenium as Se (Dissolved)	Ammoniacal Nitrogen as N	Nitrite as N	Nitrate as N	Phosphate as P	Chemical Oxygen Demand	Total Organic Carbon	Volatile Organic Compounds	Barium as Ba (Dissolved) a	PAH MS-SIM (16)	Beryllium as Be (Dissolved) a	Biochemical Oxygen Demand	GRO-HSA (AA)	TPH GC (0.01)
-		40 6 00	0.50	-0.0001	0.012	0.7	0.1	0.4	0.05		5.0		0.00	Der	-0.01			0.07
0832812	BH8F-001	18-Sep-08	0.58	<0.0001	0.012	0.7	0.1	0.4	0.35		5.0		0.09	Req	<0.01			0.07
					-													
					1													
	-																	
					+												!	
	<u> </u>				+													<u> </u>
	TES Bretby PO Box 100, Bretby Business Park,		Client N Contact	lame	RPS Co	onsultant	S					V	Vater S	ample	Analys	is	TE	ES
	Burton-on-Trent, Staffordshire, DE15 0XD							Date Printed 09-Oc			09-Oct-08							
	Tel +44 (0) 1283 554400				-							Report N	Number		EX	(R/088252	Bre	tby
	Fax +44 (0) 1283 554422				ר	CE Ir	ivesti	gatio	n			Table N	umber		_ ,	1		

Customer and Site Details: Sample Details: LIMS ID Number: QC Batch Number: Quantitation File: Directory: Dilution: RPS Consultants: TCE InvestigationBH8F-001Job NumEX0832812Date Boo3419Date ExtInitial CalibrationDate Ana006PAH_MS14\Matrix:2.5Ext Meth

Job Number: W08_8252 Date Booked in: 22-Sep-08 Date Extracted: 29-Sep-08 Date Analysed: 07-Oct-08 Matrix: Water Ext Method: Sep. Funnel

UKAS accredited?: No

Target Compounds	CAS #	R.T.	Concentration	% Fit
		(min)	ug/l	
Naphthalene	91-20-3	-	< 0.010	-
Acenaphthylene	208-96-8	-	< 0.010	-
Acenaphthene	83-32-9	-	< 0.010	-
Fluorene	86-73-7	-	< 0.010	-
Phenanthrene	85-01-8	-	< 0.010	-
Anthracene	120-12-7	-	< 0.010	-
Fluoranthene	206-44-0	-	< 0.010	-
Pyrene	129-00-0	-	< 0.010	-
Benzo[a]anthracene	56-55-3	-	< 0.010	-
Chrysene	218-01-9	-	< 0.010	-
Benzo[b]fluoranthene	205-99-2	-	< 0.010	-
Benzo[k]fluoranthene	207-08-9	-	< 0.010	-
Benzo[a]pyrene	50-32-8	-	< 0.010	-
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.010	-
Dibenzo[a,h]anthracene	53-70-3	-	< 0.010	-
Benzo[g,h,i]perylene	191-24-2	-	< 0.010	-
Total (USEPA16) PAHs	-	-	< 0.160	-

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	87
Acenaphthene-d10	86
Phenanthrene-d10	86
Chrysene-d12	88
Perylene-d12	75

Surrogates	% Rec
Nitrobenzene-d5	N.D
2-Fluorobiphenyl	54
Terphenyl-d14	64



Report Notes

Soil/Solid analysis specific:

Results expressed as mg/kg on an air dried basis unless stated otherwise S04 analysis not conducted in accordance with BS1377 unless otherwise stated Water Soluble Sulphate on 2:1 water:soil extract AR denotes analysis conducted on the As Received sample

Water analysis specific:

Results expressed as mg/l unless stated otherwise

Oil analysis specific:

Results expressed as mg/kg unless stated otherwise S.G. expressed as $g/cm^3@ 15^{\circ}C$

Filter analysis specific:

Results expressed as mg on filter unless stated otherwise

VOC analysis specific:

Explanatory notes for data flagging

- **U** = undetected above reporting limit
- J = concentration at instrument was below lowest calibration standard
- E = concentration at instrument was above top calibration standard
- **B** = compound was detected in method blank

Gas (Tedlar bag) analysis specific:

Results expressed as ug/l unless stated otherwise

Air (Carbon tube) analysis specific:

Results expressed as ug on tube unless stated otherwise

Asbestos analysis specific:

CH denotes Chrysotile CR denotes Crocidolite AM denotes Amosite NADIS denotes No Asbestos Detected in Sample NBFO denotes No Bulk fibres Observed

General notes:

^ this analysis was subcontracted to another laboratory

\$ Within laboratory tolerances

\$\$ unable to analyse due to nature of sample

¥ Results for guidance only, possible interference

& Blank corrected

I.S insufficient sample for analysis

Intf Unable to analyse due to interferences

N.D Not determined

N.R Not recorded

N.Det Not detected

 $\ensuremath{\text{Req}}$ Analysis Requested, see attached sheets for results

P Raised detection limit due to nature of sample

* denotes that all accreditation has been removed by the laboratory for this result.

‡ denotes that Mcerts accreditation has been removed by the laboratory for this result.

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory

may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected.

If you require further details of the circumstances leading to the removal of the accreditation from any data item please do not hesitate to contact the laboratory



TEST REPORT WATER SAMPLE ANALYSIS



TES Report No. EXR/088722 (Ver. 1)

RPS Consultants Park House **Greyfriars Road** Cardiff CF10 3AF

Site: AWE Burghfield

The 4 samples described in this report were logged for analysis by TES Bretby on 07-Oct-2008. The analysis was completed by: 21-Oct-2008

Tests where the accreditation is set to N or No, and any individual data items marked with a * are not UKAS accredited Any opinions or interpretations expressed herein are outside the scope of any UKAS accreditation held by TES Bretby Laboratories.

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 3) Table of PAH (MS-SIM) (10) Results (Pages 4 to 7) GC-FID Chromatograms (Pages 8 to 11) Table of Report Notes (Page 12)

On behalf of **TES Bretby :** J Elstub

1.2/66

Project Co-ordinator

Date of Issue: 21-Oct-2008

Tests marked '^' have been subcontracted to another laboratory.

TES Bretby accepts no responsibility for any sampling not carried out by our personnel.

		r									ma/l		ma/l ma/l					
Units : Method Codes : Method Reporting Limits :			W/SI M2	mg/i														
			VV SLIVIS	Calc	3.0	1.0	1.0	0.001	0.001	0.0001	0.001	0.001	0.002	0.001	0.01	0.0001	0.001	0.01
UKAS Accredited :		edited :	ves	ves	ves	ves	ves	ves	ves	ves	ves	ves	ves	ves	ves	ves	ves	ves
TES ID Number EX	Client Sample Description	Sample Date	pH units	Total Hardness as CaCO3	Total Sulphur as SO4 (Dissolved) a	Calcium as Ca (Dissolved) a	Magnesium as Mg (Dissolved) a	Nickel as Ni (Dissolved)	Chromium as Cr (Dissolved)	Cadmium as Cd (Dissolved)	Copper as Cu (Dissolved)	Lead as Pb (Dissolved)	Zinc as Zn (Dissolved)	Arsenic as As (Dissolved)	Boron as B (Dissolved) a	Mercury as Hg (Dissolved)	Selenium as Se (Dissolved)	Ammoniacal Nitrogen as N
0834584	BH8F-003	02-Oct-08	6.8	4150	3090	560	668	0.025	0.013	0.0002	0.005	<0.001	0.021	0.001	0.59	0.0001	0.003	0.2
0834585	BH8F-002	02-Oct-08	7.3	1310	1280	235	176	0.003	0.007	<0.0001	0.003	<0.001	0.014	0.005	0.43	<0.0001	<0.001	0.9
0834586	BH8S-001	02-Oct-08	6.9	2400	2110	502	277	0.014	0.007	<0.0001	0.003	<0.001	0.017	0.001	0.31	<0.0001	0.001	0.17
0834587	BH8S-002	02-Oct-08	7.4	996	754	181	132	0.002	0.006	<0.0001	<0.001	<0.001	0.004	<0.001	0.45	<0.0001	<0.001	1.2
TES Bretby PO Box 100, Bretby Business Park, Burton-on-Trent, Staffordshire, DE15 0XD		Client Na Contact	Client Name RPS Consultants Contact Mr G Moore								Water Sample Analysis Date Printed 21-Oct				is 21-Oct-08			
Tel +44 (0) 1283 554400 Fax +44 (0) 1283 554422				AWE Burghfield									Report Number Table Number			(R/088722 1	Bretby	

Units : Method Codes : Method Reporting Limits :			ma/l ma/l ma/l ma/l ua/l ma/l						ma/l								
			KONENS	KONENS	KONENS	WSLM13	CPWATVAF	PAHSWSIM		TPHFID							
			0.01	0.2	0.01	0.1	0.01	0.01	0.01	0.01							
UKAS Accredited :		yes	yes	yes	yes	no	no	no	no								
TES ID Number EX	Client Sample Description	Sample Date	Nitrite as N	Nitrate as N	Phosphate as P	Total Organic Carbon	Barium as Ba (Dissolved) a	PAH MS-SIM (16)	Beryllium as Be (Dissolved) a	TPH GC (0.01)							
0834584	BH8F-003	02-Oct-08	0.23	2.0	<0.01	7.2	0.08	Req	<0.01	<0.01							
0834585	BH8F-002	02-Oct-08	0.02	0.4	<0.01	5.0	0.05	Req	<0.01	0.01							
0834586	BH8S-001	02-Oct-08	<0.01	0.6	0.15	4.9	0.06	Req	<0.01	<0.01							
0834587	BH8S-002	02-Oct-08	<0.01	<0.2	0.12	3.8	0.05	Req	<0.01	<0.01							
	TES Bretby PO Box 100, Bretby Business Park,		Client N Contact	Client Name RPS Consultants V Contact Mr G Moore V							Water Sample Analysis				TES		
Burton-on-Trent, Staffordshire, DE15 0XD Tel +44 (0) 1283 554400 Fax +44 (0) 1283 554422			AWE Burghfield								Date Pri Report I Table N	Date Printed21-Oct-08Report NumberEXR/088722Table Number1			Bretby		
Customer and Site Details: Sample Details: LIMS ID Number: QC Batch Number: **Quantitation File:** Directory: **Dilution:**

RPS Consultants: AWE Burghfield BH8F-003 EX0834584 902 Initial Calibration 017PAH GC11\ 2.5

Job Number: Date Booked in: Date Extracted: Date Analysed: Matrix: Water Ext Method:

W08_8722 07-Oct-08 17-Oct-08 18-Oct-08 Sep. Funnel

UKAS accredited?: No

Target Compounds	CAS #	R.T.	Concentration	% Fit
		(min)	ug/l	
Naphthalene	91-20-3	-	< 0.010	-
Acenaphthylene	208-96-8	-	< 0.010	-
Acenaphthene	83-32-9	-	< 0.010	-
Fluorene	86-73-7	-	< 0.010	-
Phenanthrene	85-01-8	-	< 0.010	-
Anthracene	120-12-7	-	< 0.010	-
Fluoranthene	206-44-0	-	< 0.010	-
Pyrene	129-00-0	-	< 0.010	-
Benzo[a]anthracene	56-55-3	-	< 0.010	-
Chrysene	218-01-9	-	< 0.010	-
Benzo[b]fluoranthene	205-99-2	-	< 0.010	-
Benzo[k]fluoranthene	207-08-9	-	< 0.010	-
Benzo[a]pyrene	50-32-8	-	< 0.010	-
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.010	-
Dibenzo[a,h]anthracene	53-70-3	-	< 0.010	-
Benzo[g,h,i]perylene	191-24-2	-	< 0.010	_
Total (USEPA16) PAHs	-	-	< 0.160	-

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	114
Acenaphthene-d10	113
Phenanthrene-d10	111
Chrysene-d12	123
Perylene-d12	135

Surrogates	% Rec
Nitrobenzene-d5	N.D
2-Fluorobiphenyl	60
Terphenyl-d14	76

Customer and Site Details: Sample Details: LIMS ID Number: QC Batch Number: **Quantitation File:** Directory: **Dilution:**

RPS Consultants: AWE Burghfield BH8F-002 EX0834585 902 Initial Calibration 017PAH_GC11\ 2.5

Job Number: Date Booked in: Date Extracted: Date Analysed: Matrix: Water Ext Method:

W08_8722 07-Oct-08 17-Oct-08 18-Oct-08 Sep. Funnel

Target Compounds	CAS #	R.T.	Concentration	% Fit
		(min)	ug/l	
Naphthalene	91-20-3	3.18	0.027	М
Acenaphthylene	208-96-8	-	< 0.010	-
Acenaphthene	83-32-9	4.34	0.010	М
Fluorene	86-73-7	-	< 0.010	-
Phenanthrene	85-01-8	-	< 0.010	-
Anthracene	120-12-7	-	< 0.010	-
Fluoranthene	206-44-0	-	< 0.010	-
Pyrene	129-00-0	-	< 0.010	-
Benzo[a]anthracene	56-55-3	-	< 0.010	-
Chrysene	218-01-9	-	< 0.010	-
Benzo[b]fluoranthene	205-99-2	-	< 0.010	-
Benzo[k]fluoranthene	207-08-9	-	< 0.010	-
Benzo[a]pyrene	50-32-8	-	< 0.010	-
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.010	-
Dibenzo[a,h]anthracene	53-70-3	-	< 0.010	-
Benzo[g,h,i]perylene	191-24-2	-	< 0.010	-
Total (USEPA16) PAHs	-	-	< 0.177	-

UKAS accredited?: No

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	104
Acenaphthene-d10	103
Phenanthrene-d10	103
Chrysene-d12	120
Perylene-d12	132

Surrogates	% Rec
Nitrobenzene-d5	N.D
2-Fluorobiphenyl	57
Terphenyl-d14	73

Customer and Site Details: Sample Details: LIMS ID Number: QC Batch Number: **Quantitation File:** Directory: **Dilution:**

RPS Consultants: AWE Burghfield BH8S-001 EX0834586 902 Initial Calibration 017PAH_GC11\ 2.5

Job Number: Date Booked in: Date Extracted: Date Analysed: Matrix: Water Ext Method:

W08_8722 07-Oct-08 17-Oct-08 18-Oct-08 Sep. Funnel

Target Compounds	CAS #	R.T.	Concentration	% Fit
		(min)	ug/l	
Naphthalene	91-20-3	-	< 0.010	-
Acenaphthylene	208-96-8	-	< 0.010	-
Acenaphthene	83-32-9	-	< 0.010	-
Fluorene	86-73-7	-	< 0.010	-
Phenanthrene	85-01-8	-	< 0.010	-
Anthracene	120-12-7	-	< 0.010	-
Fluoranthene	206-44-0	-	< 0.010	-
Pyrene	129-00-0	-	< 0.010	-
Benzo[a]anthracene	56-55-3	-	< 0.010	-
Chrysene	218-01-9	-	< 0.010	-
Benzo[b]fluoranthene	205-99-2	-	< 0.010	-
Benzo[k]fluoranthene	207-08-9	-	< 0.010	-
Benzo[a]pyrene	50-32-8	-	< 0.010	-
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.010	-
Dibenzo[a,h]anthracene	53-70-3	-	< 0.010	-
Benzo[g,h,i]perylene	191-24-2	-	< 0.010	_
Total (USEPA16) PAHs	-	-	< 0.160	-

UKAS accredited?: No

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	104
Acenaphthene-d10	104
Phenanthrene-d10	101
Chrysene-d12	112
Perylene-d12	120

Surrogates	% Rec
Nitrobenzene-d5	N.D
2-Fluorobiphenyl	64
Terphenyl-d14	79

Customer and Site Details: Sample Details: LIMS ID Number: QC Batch Number: **Quantitation File:** Directory: **Dilution:**

RPS Consultants: AWE Burghfield BH8S-002 EX0834587 902 Initial Calibration 017PAH GC11\ 2.5

Job Number: Date Booked in: Date Extracted: Date Analysed: Matrix: Water Ext Method:

W08_8722 07-Oct-08 17-Oct-08 18-Oct-08 Sep. Funnel

UKAS accredited?: No

Target Compounds	CAS #	R.T.	Concentration	% Fit
		(min)	ug/l	
Naphthalene	91-20-3	3.18	0.022	66
Acenaphthylene	208-96-8	-	< 0.010	-
Acenaphthene	83-32-9	-	< 0.010	-
Fluorene	86-73-7	-	< 0.010	-
Phenanthrene	85-01-8	-	< 0.010	-
Anthracene	120-12-7	-	< 0.010	-
Fluoranthene	206-44-0	-	< 0.010	-
Pyrene	129-00-0	-	< 0.010	-
Benzo[a]anthracene	56-55-3	-	< 0.010	-
Chrysene	218-01-9	-	< 0.010	-
Benzo[b]fluoranthene	205-99-2	-	< 0.010	-
Benzo[k]fluoranthene	207-08-9	-	< 0.010	-
Benzo[a]pyrene	50-32-8	-	< 0.010	-
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.010	-
Dibenzo[a,h]anthracene	53-70-3	-	< 0.010	-
Benzo[g,h,i]perylene	191-24-2	-	< 0.010	-
Total (USEPA16) PAHs	-	-	< 0.172	-

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	103
Acenaphthene-d10	101
Phenanthrene-d10	97
Chrysene-d12	104
Perylene-d12	111

Surrogates	% Rec
Nitrobenzene-d5	N.D
2-Fluorobiphenyl	62
Terphenyl-d14	74









Report Notes

Soil/Solid analysis specific:

Results expressed as mg/kg on an air dried basis unless stated otherwise S04 analysis not conducted in accordance with BS1377 unless otherwise stated Water Soluble Sulphate on 2:1 water:soil extract AR denotes analysis conducted on the As Received sample

Water analysis specific:

Results expressed as mg/l unless stated otherwise

Oil analysis specific:

Results expressed as mg/kg unless stated otherwise S.G. expressed as $g/cm^3@ 15^{\circ}C$

Filter analysis specific:

Results expressed as mg on filter unless stated otherwise

VOC analysis specific:

Explanatory notes for data flagging

- **U** = undetected above reporting limit
- J = concentration at instrument was below lowest calibration standard
- E = concentration at instrument was above top calibration standard
- **B** = compound was detected in method blank

Gas (Tedlar bag) analysis specific:

Results expressed as ug/l unless stated otherwise

Air (Carbon tube) analysis specific:

Results expressed as ug on tube unless stated otherwise

Asbestos analysis specific:

CH denotes Chrysotile CR denotes Crocidolite AM denotes Amosite NADIS denotes No Asbestos Detected in Sample NBFO denotes No Bulk fibres Observed

General notes:

^ this analysis was subcontracted to another laboratory

\$ Within laboratory tolerances

\$\$ unable to analyse due to nature of sample

¥ Results for guidance only, possible interference

& Blank corrected

I.S insufficient sample for analysis

Intf Unable to analyse due to interferences

N.D Not determined

N.R Not recorded

N.Det Not detected

Req Analysis Requested, see attached sheets for results

P Raised detection limit due to nature of sample

* denotes that all accreditation has been removed by the laboratory for this result.

‡ denotes that Mcerts accreditation has been removed by the laboratory for this result.

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory

may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected.

If you require further details of the circumstances leading to the removal of the accreditation from any data item please do not hesitate to contact the laboratory



TEST REPORT WATER SAMPLE ANALYSIS



TES Report No. EXR/088727 (Ver. 1)

RPS Consultants Park House Greyfriars Road Cardiff CF10 3AF

Site: AWE Burghfield

The 1 sample described in this report was logged for analysis by TES Bretby on 07-Oct-2008. The analysis was completed by: 21-Oct-2008

Tests where the accreditation is set to N or No, and any individual data items marked with a * are not UKAS accredited Any opinions or interpretations expressed herein are outside the scope of any UKAS accreditation held by TES Bretby Laboratories.

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 3) Table of PAH (MS-SIM) (10) Results (Page 4) GC-FID Chromatograms (Page 5) Table of VOC (HSA) Results (Pages 6 to 10) Table of VOC (Tics) Results (Pages 11 to 15) Table of Report Notes (Page 16)

On behalf of TES Bretby : J Elstub

1.2/66

Project Co-ordinator

Date of Issue: 21-Oct-2008

Tests marked '^' have been subcontracted to another laboratory.

TES Bretby accepts no responsibility for any sampling not carried out by our personnel.

Units :			ma/l	ma/l	ma/l	ma/l	ma/l	ma/l	ma/l	ma/l	ma/l	ma/l	ma/l	ma/l	ma/l	ma/l	ma/l	
Method Codes : WSLM			WSLM3	Calc	ICPWATVAF	CPWATVAF	CPWĂTVAR	ICPMSW	ICPMSW	ICPMSW	ICPMSW	ICPMSW	ICPMSW	ICPMSW	KONEFE	KONEFE	KONEFE	ICPMSW
Method Reporting Limits :				3.0	1.0	1.0	0.001	0.001	0.0001	0.001	0.001	0.002	0.002	0.01	0.01	0.01	0.001	
	UKAS Acc	credited :	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
TES ID Number EX/	Client Sample Description	Sample Date	pH units	Total Hardness as CaCO3	Total Sulphur as SO4 (Dissolved) a	Calcium as Ca (Dissolved) a	Magnesium as Mg (Dissolved) a	Nickel as Ni (Dissolved)	Chromium as Cr (Dissolved)	Cadmium as Cd (Dissolved)	Copper as Cu (Dissolved)	Lead as Pb (Dissolved)	Zinc as Zn (Dissolved)	Manganese as Mn (Dissolved)	Ferric Iron as Fe(3+)	Ferrous Iron as Fe(2+)	Iron as Fe:(Total)	Arsenic as As (Dissolved)
-		00.0-+ 00	6.0	2400	2000	400	240	0.025	0.000	0.0000	0.004	0.001	0.040					0.002
0834598	BH8F-001	02-UCT-08	0.9	2490	2090	423	349	0.025	0.008	0.0002	0.004	0.001	0.046					0.003
	TES Bretby PO Box 100, Bretby Business Park.		Client N	lame	RPS Co	onsultant	S					v	Vater S	ample	Analys	is	TE	ES
PU Box 100, Bretby Business Park, Burton-on-Trent, Staffordshire, DE15 0XD Tel +44 (0) 1283 554400 Fax +44 (0) 1283 554422				AWE Burghfield							Date Prin Report N Table Nu	nted lumber umber		EX	21-Oct-08 (R/088727 1	Bre	etby	

Units : mg/l		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	
Method Codes :		CPWATVA	R ICPMSW	ICPMSW	KONENS	KONENS	KONENS	KONENS	WSLM11	WSLM13	VOCSWHSA	CPWATVAF	PAHSWSIN	ICPWATVAF	WSLM20	TPHFID	
Method Reporting Limits :		0.01	0.0001	0.001	0.01	0.01	0.2	0.01	5	0.1	1	0.01	0.01	0.01	2	0.01	
	UKAS Acc	credited :	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	no	no	no	no	no
TES ID Number EX/	Client Sample Description	Sample Date	Boron as B (Dissolved) a	Mercury as Hg (Dissolved)	Selenium as Se (Dissolved)	Ammoniacal Nitrogen as N	Nitrite as N	Nitrate as N	Phosphate as P	Chemical Oxygen Demand	Total Organic Carbon	Volatile Organic Compounds	Barium as Ba (Dissolved) a	PAH MS-SIM (16)	Beryllium as Be (Dissolved) a	Biochemical Oxygen Demand	TPH GC (0.01)
-																	
0834598	BH8F-001	02-Oct-08	0.50	<0.0001	0.006	0.21	0.09	1.0	0.27		5.7		0.08	Req	<0.01		0.02
	TES Bretby PO Box 100, Bretby Business Park,		Client N Contac	Name	RPS Co	onsultant	s					v	Vater S	ample	Analys	is	TES
Burton-on-Trent, Staffordshire, DE15 0XD Tel +44 (0) 1283 554400 Fax +44 (0) 1283 554422				AWE Burghfield Date Printed 21-Oct-08 Report Number EXR/088727 Table Number 1					Bretby								

Customer and Site Details: Sample Details: LIMS ID Number: QC Batch Number: **Quantitation File:** Directory: **Dilution:**

RPS Consultants: AWE Burghfield BH8F-001 EX0834598 899 Initial Calibration 1017PAH.GC5\ 2.5

Job Number: W08_8727 Date Booked in: Date Extracted: Date Analysed: Matrix: Water Ext Method:

07-Oct-08 16-Oct-08 17-Oct-08 Sep. Funnel

UKAS accredited?: No

Target Compounds	CAS #	R.T.	Concentration	% Fit
		(min)	ug/l	
Naphthalene	91-20-3	-	< 0.010	-
Acenaphthylene	208-96-8	-	< 0.010	-
Acenaphthene	83-32-9	-	< 0.010	-
Fluorene	86-73-7	-	< 0.010	-
Phenanthrene	85-01-8	-	< 0.010	-
Anthracene	120-12-7	-	< 0.010	-
Fluoranthene	206-44-0	-	< 0.010	-
Pyrene	129-00-0	-	< 0.010	-
Benzo[a]anthracene	56-55-3	-	< 0.010	-
Chrysene	218-01-9	-	< 0.010	-
Benzo[b]fluoranthene	205-99-2	-	< 0.010	-
Benzo[k]fluoranthene	207-08-9	-	< 0.010	-
Benzo[a]pyrene	50-32-8	-	< 0.010	-
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.010	-
Dibenzo[a,h]anthracene	53-70-3	-	< 0.010	-
Benzo[g,h,i]perylene	191-24-2	-	< 0.010	-
Total (USEPA16) PAHs	-	-	< 0.160	-

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	104
Acenaphthene-d10	102
Phenanthrene-d10	108
Chrysene-d12	110
Perylene-d12	105

Surrogates	% Rec
Nitrobenzene-d5	N.D
2-Fluorobiphenyl	62
Terphenyl-d14	69



Report Notes

Soil/Solid analysis specific:

Results expressed as mg/kg on an air dried basis unless stated otherwise S04 analysis not conducted in accordance with BS1377 unless otherwise stated Water Soluble Sulphate on 2:1 water:soil extract AR denotes analysis conducted on the As Received sample

Water analysis specific:

Results expressed as mg/l unless stated otherwise

Oil analysis specific:

Results expressed as mg/kg unless stated otherwise S.G. expressed as $g/cm^3@ 15^{\circ}C$

Filter analysis specific:

Results expressed as mg on filter unless stated otherwise

VOC analysis specific:

Explanatory notes for data flagging

- **U** = undetected above reporting limit
- J = concentration at instrument was below lowest calibration standard
- E = concentration at instrument was above top calibration standard
- **B** = compound was detected in method blank

Gas (Tedlar bag) analysis specific:

Results expressed as ug/l unless stated otherwise

Air (Carbon tube) analysis specific:

Results expressed as ug on tube unless stated otherwise

Asbestos analysis specific:

CH denotes Chrysotile CR denotes Crocidolite AM denotes Amosite NADIS denotes No Asbestos Detected in Sample NBFO denotes No Bulk fibres Observed

General notes:

^ this analysis was subcontracted to another laboratory

\$ Within laboratory tolerances

\$\$ unable to analyse due to nature of sample

¥ Results for guidance only, possible interference

& Blank corrected

I.S insufficient sample for analysis

Intf Unable to analyse due to interferences

N.D Not determined

N.R Not recorded

N.Det Not detected

 $\ensuremath{\text{Req}}$ Analysis Requested, see attached sheets for results

P Raised detection limit due to nature of sample

* denotes that all accreditation has been removed by the laboratory for this result.

‡ denotes that Mcerts accreditation has been removed by the laboratory for this result.

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